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DEPARTMENT OF THE INTERIOR

BUREAU OF EDUCATION : ALASKA SCHOOL SERVICE

MEDICAL HANDBOOK

BY

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WASHINGTON
GOVERNMENT PRINTING OFFICE
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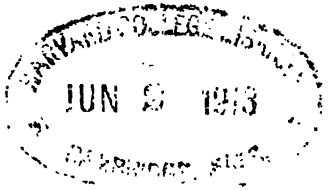

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PREFACE.

This book is written especially for the teachers of the Alaska school service, and pains have been taken to describe the symptom and outline the treatment of the common diseases of the natives in simple, plain language.

In Alaska there are large areas in which the services of a physician are not obtainable, and it often becomes the duty of the teacher not only to render first aid to an injured or sick native, but to care for him through the entire course of severe illness without the aid of a physician.

"A little learning is a dangerous thing," and this is especially true in medicine. Teachers are warned to be careful in prescribing. It is often difficult to make a diagnosis of the disease with which the patient is suffering. To lessen this difficulty, a chapter on symptoms has been prepared, which will be of assistance in determining any case.

Study this book carefully and remember *that all doses given in it are for adults unless otherwise specified.* The proper dose for a child can be

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ascertained by referring to Young's rule, fully described on p. 14.

In conclusion, remember that this handbook is not intended to replace the services of a physician, and all cases should be referred to one wherever possible.

Hughes's Practice of Medicine, which is found in every school library, will give you further details of any disease which may occur.

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MEDICAL HANDBOOK.

CHAPTER I.

PREPARATIONS, WEIGHTS AND MEASURES.

Some of the official preparations of the United States Pharmacopœia are here given:

Alkaloids are natural principles existing in plants and extracted by chemical art.

Aqua is a watery solution of volatile substances.

Elixirs are pleasant-tasting alcoholic solutions of active drugs.

Emulsions are preparations which contain oil in a state of suspension.

Extracts, Fluid, are alcoholic concentrated tinctures of vegetable drugs.

Glycerites are mixtures of medicinal substances with glycerin.

Liniments are oily preparations for external use with friction, made by dissolving various drugs in oily liquids.

Mixtures are aqueous preparations of insoluble substances, held in suspension by a suitable vehicle.

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Ointments are soft, fatty mixtures of medicinal agents with a basis of lard, petroleum, or fixed oils, intended for application to the skin by rubbing.

Pills are small spherical masses composed of medicinal agents and intended to be swallowed whole.

Powders are dry substances reduced to fine particles.

Spirits are alcoholic preparations of volatile drugs.

Suppositories are solid bodies consisting of medicinal substances incorporated with Cacao butter and intended for introduction into the rectum or vagina.

Sirups are concentrated solutions of sugar in water with soluble medicinal substances.

Tablets are small, flat medicated cakes.

Compressed Tablets are large medicated cakes made usually to be dissolved before administration.

Tinctures are alcoholic solutions of nonvolatile drugs.

Troches, Tablets, or **Lozenges** are small flattened cakes consisting of medicinal substances incorporated with sugar, mucilage, etc.

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WEIGHTS AND MEASURES.

The amount of each drug in a prescription is expressed in grains, scruples, drachms, ounces, and pounds; or, if it be a liquid, in minims, drachms, ounces, pints, etc.

1 ounce = 480 grains.

1 ounce = 8 drachms.

1 drachm = 60 grains.

1 drachm = 3 scruples.

1 pound = 12 Troy ounces.

1 minim = 1 drop (water).

1 fluid ounce = 8 fluid drachms.

1 pint = 16 fluid ounces.

1 gallon = 8 pints.

Teaspoonful = 1 drachm.

Teaspoonful = 60 minims or drops.

Tablespoonful = 4 drachms.

Tablespoonful = $\frac{1}{2}$ ounce.

Teacup = 4 ounces.

Dessertspoonful = 2 drachms.

Wineglassful = $1\frac{1}{2}$ to 2 ounces.

Glass = 8 to 10 ounces.

1 fluid ounce = 2 tablespoonfuls.

1 fluid ounce = 8 teaspoonfuls.

1 fluid ounce = 480 minims.

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CHAPTER II.

DRUGS—PHYSIOLOGICAL ACTIONS, DOSES.

Ammonia Spirit, Aromatic—stimulant, expectorant, antacid; 20 to 60 drops.

Bismuth Subnitrate—sedative to mucous membranes; 10 to 30 grains.

Brown Mixture—expectorant; 1 to 2 teaspoonfuls.

Calomel—purgative; $\frac{1}{8}$ to 2 grains.

Castor Oil—laxative; 1 to 4 teaspoonfuls.

Elixir Heroin and Terpin Hydrate—sedative, cough mixture; 1 teaspoonful.

Elixir of Iron, Quinine, and Strychnine—tonic; 1 teaspoonful.

Extract Cascara Sagrada, Aromatic—laxative, cathartic; 15 drops to 1 teaspoonful.

Creosote—antiseptic alterative; 1 to 5 drops.

Chloranodyne—antispasmodic and sedative; 5 to 15 drops.

Codeine (an alkaloid of opium)—sedative; $\frac{1}{8}$ to $\frac{1}{4}$ of a grain.

Cod-Liver Oil—nutrient tonic; 1 to 8 teaspoonfuls.

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Dover's Powder—expectorant, sedative; 2 to 10 grains.

Ergot Fluid Extract—antihemorrhagic; 10 to 60 drops.

Iodide of Mercury—antisyphilitic; $\frac{1}{8}$ to 1 grain.

Iodine Tincture—alterative, counter irritant; for external use only.

Iron Tincture—alterative tonic; 5 to 15 drops in water.

Iron Iodide Sirup—alterative tonic; 10 drops to 1 teaspoonful.

Ipecac Wine—expectorant and emetic; 1 teaspoonful.

Magnesium Sulphate (Epsom Salts)—cathartic; 1 to 4 tablespoonfuls.

Morphine (alkaloid of opium)—narcotic; $\frac{1}{8}$ to $\frac{1}{4}$ of a grain.

Tincture Opium Camphorated (paregoric)—antispasmodic, narcotic; 3 to 15 drops.

Pill Cathartic Compound—cathartic; 1 to 2 pills.

Potassium Bromide—sedative; 5 to 30 grains.

Potassium Iodide—alterative; 5 to 30 grains.

Protiodide of Mercury—antisyphilitic; $\frac{1}{8}$ to 1 grain.

Quinine Sulphate—antipyretic, tonic; 1 to 3 grains.

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Sirup Hypophosphites Compound—tonic; 1 to 2 teaspoonfuls.

Salol and Phenacetin—antipyretic, analgesic; 1 to 2 tablets.

Salol—intestinal and urinary antiseptic; 5 to 10 grains.

Sodium Bicarbonate—antacid; 5 to 60 grains.

Sodium Salicylate—antirheumatic; 5 to 20 grains.

Strychnine Sulphate—stimulant, tonic; $\frac{1}{60}$ of a grain.

Sweet Spirits of Niter—antipyretic and diuretic; 10 to 60 drops.

Zinc Sulphocarbolate—intestinal, antiseptic; $\frac{1}{2}$ to 2 grains.

Viburnum Extract Fluid—uterine tonic; $\frac{1}{2}$ to 1 teaspoonful.

DOSES FOR CHILDREN.

The doses of drugs given on the foregoing pages are for adults. For children the following rule (Young's) will be found most convenient:

Add 12 to the age and divide by the age; thus for a child 2 years old, 2 plus 12 equals 14; divide by age given (2) and the dose is one-seventh of the adult dose.

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CHAPTER III.

THERAPEUTIC USES OF DRUGS.

ACID, BORIC.

A valuable antiseptic, as it causes no irritation to the tissues; it is largely used as a dusting powder for wounds, ulcers, etc., and in solution of 1 teaspoonful to 8 or 10 ounces of water as a wash in diseases of the eyes, ears, and mouth.

ACID, CARBOLIC (POISONOUS).

Carbolic acid is largely used externally, and as a deodorant and disinfectant for soiled linen, bedpans, closets, drains, etc. In solution of 1 or 2 teaspoonfuls to 16 ounces of water it is often employed for washing wounds, ulcers, and for disinfecting surgical instruments.

CARBOLIZED VASELINE.

Is used as an emollient in eruptive fevers, to allay irritation of the skin, and to prevent the dried scaly particles from spreading. It has also antiseptic power.

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BICARBONATE OF SODA (BAKING SODA).

An efficient household remedy for heartburn, indigestion, etc., in doses of from ¼ to ½ teaspoonful dissolved in half a glass of hot water. It is an invaluable remedy for burns; mix with water to the consistency of paste and apply to the burned surface, or moisten the burned surface and dust thickly with soda.

Dissolved in water and applied, it affords relief for insect bites.

ARGYROL.

In solution of from 5 to 10 per cent it is often used in inflammatory and purulent diseases of the eyes. It should be dropped into the eyes from a scrupulously clean glass dropper 3 or 4 times a day. Take care not to drop on the clothing, as it leaves yellow stains, which, however, may be removed by sponging with a solution of Bichloride of Mercury. The best results are obtained from freshly prepared solutions of Argyrol. As this drug is expensive, avoid waste and never prepare more than ½ ounce at a time.

BICHLORIDE OF MERCURY TABLETS.

These antiseptic tablets are never used otherwise than externally, and never in stronger solution than 1 to 1,000 (that is, one tablet of $7\frac{7}{10}$

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grains to 1 pint of water). As the tablets differ in strength, read carefully the directions, which are usually printed on the label of the bottle.

Bichloride makes an excellent wash for ulcers and wounds, also for disinfecting the hands either before or after operating, dressing wounds, or touching infectious or pus cases.

As Bichloride of Mercury is easily absorbed by the skin and mucous membrane and is liable to produce poisoning, use with caution. *Never use it for sterilizing metal instruments, as it corrodes them.*

BISMUTH SUBNITRATE.

It is often applied externally in the form of powder or ointment to inflamed areas, as in chapped nipples, ulcers, and eczema. Bismuth is a mild sedative and astringent. Internally it is useful in vomiting, pain in the stomach, catarrh of the stomach, and gastric ulcers. The astringent influence of Bismuth on the intestines makes it a valuable remedy for diarrhea, especially in children. Little or no effect is to be expected from less than 20 grains for adults, or 5 grains for children. These doses may be increased with perfect safety.

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BROWN MIXTURE.

Brown Mixture is a compound which contains expectorants and a small amount of Camphorated tincture of opium (paregoric). It makes an excellent cough remedy, especially for infants and children, in colds, bronchitis, etc. The liquid form is most suitable for infants and small children. The tablets, which may be easily carried, are very convenient for adults. Dose for children, from 5 drops to 1 teaspoonful (according to age) every 2 or 3 hours. Dose for adults, 1 to 2 tablets every 3 hours.

CALOMEL.

It is used externally as a dusting powder for syphilitic sores and in eye diseases. Internally it is a valuable purgative, possessing also the property of an intestinal disinfectant, in doses of from $\frac{1}{4}$ of a grain to 2 grains.

It is largely used in biliousness, in doses of $\frac{1}{4}$ of a grain every half hour until 2 grains are taken. Follow by Epsom salts ($\frac{1}{2}$ ounce) at the end of 3 or 4 hours.

For children who are "under the weather" and never quite well, who have fetid breath and ill-smelling pasty stools, calomel often gives relief; $\frac{1}{10}$ of a grain every half hour until 4 doses are taken. This treatment is repeated every fourth or fifth morning.

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CASCARA SAGRADA (FLUID AROMATIC).

Is a laxative in small doses and a cathartic in large doses. Its pleasant taste and non-griping effect make it very suitable for infants, children, and the aged. Dose, 15 drops (for infants) to 1 teaspoonful for adults.

In cases of hemorrhoids (piles) with constipation, it is the most suitable remedy.

CASCARA COMPOUND PILLS.

Are used where stronger action is required. Dose, from 1 to 2 pills at night. (The pills are more convenient to carry.)

CASTOR OIL.

Is a simple laxative, rapid, certain, and mild, producing one or more semisolid stools in 4 to 6 hours. Its only disadvantage lies in its unpleasant taste. It is the best of all simple purgatives when only free evacuation of the bowels is desired. It may be given in all diseases where a laxative is permissible, and is therefore especially employed in the treatment of diarrhea due to the presence of indigestible or undigested food in the bowels. It is the most valuable purgative for children. At the same time, it must not be used as a routine purge, as its prolonged use causes constipation.

Dose, from 1 teaspoonful to 2 tablespoonfuls.

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CHLORANODYNE.

Is a mixture consisting of strong narcotics, such as Cannabis Indica, Morphine, etc.; therefore it should be used cautiously, as an overdose may cause death.

It is a valuable remedy in stomach and intestinal colic in the adult, or in cases of intense abdominal pain of obscure origin. Full dose (for adults), 10 to 15 drops, to be repeated in 15 minutes, only if necessary.

CODEINE.

Codeine is an alkaloid of opium. It is used for cases with excessive cough and pain. It should never be given continuously for any length of time, as it is liable to cause the Codeine habit. It must never be given to children.

Dose, from $\frac{1}{8}$ to $\frac{1}{4}$ of a grain.

COD-LIVER OIL.

Cod-liver oil is an easily digested, nutrient oil. During its use there is usually an increase of red corpuscles and of bodily weight. It is the most useful of all tonics for young children, but should be given with discretion, or it may disagree. It should not be ordered if there are signs of dyspepsia, or if its administration interferes with the child's appetite or digestion.

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It is extensively used in all wasting diseases, such as scrofula, advanced stages of syphilis, tuberculosis, chronic bronchitis, rachitis, and general debility due to overwork and underfeeding.

Dose, from 1 teaspoonful to 2 tablespoonfuls after meals.

CREOSOTE.

Creosote is used internally as a disinfectant and deodorant in tuberculosis, chronic bronchitis, gangrene, and other diseases of the lungs attended with foul discharges. It occasionally proves useful in some forms of vomiting and diarrhea due to bacterial decomposition in the intestines. The specific action of this drug depends on the fact that it has power to destroy low vegetable organisms.

Dose, from 1 to 3 drops.

DOVER'S POWDER.

Each 10 grains contains 1 grain of powdered opium ($\frac{1}{10}$ grain Morphine). It produces profuse sweating, relieves pain, and checks diarrhea. It is largely used for breaking up colds, in severe cases of pleurisy, and in cases where the cough is very troublesome.

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Dose for children, from 1 to 2 grains. Dose for adults, 5 to 10 grains, to be repeated if necessary.

ELIXIR IRON, QUININE, AND STRYCHNINE.

Is an excellent compound, having a tonic effect. Used largely in anemia, loss of appetite, loss of strength, nervous breakdown, convalescence, etc.

Dose for adults, 1 teaspoonful 3 times a day before meals. Dose for children, from 10 drops to ½ teaspoonful.

ELIXIR HEROIN AND TERPIN HYDRATE.

Is a cough mixture of great value in far-advanced tubercular cases, but as it contains Heroin, which is an alkaloid of opium, it should never be dispensed for children.

Dose, ½ to 1 teaspoonful in plenty of water every 3 or 4 hours.

EPSOM SALTS.

An excellent saline purgative, causing free, watery evacuations of the bowels; because of its rapid action it should always be prescribed where a speedy movement of the bowels is desirable. As Epsom salts neutralizes the excessive acidity of the stomach and bowels, and

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prevents the formation of gas, it is a most valuable purgative in diseases of the stomach, intestines, and abdomen. It is often used in Bright's disease, because of its diuretic effect on the kidneys. It also neutralizes overacidity of the urine.

Should the patient, owing to irritability of the stomach, be unable to retain Epsom salts, it may be given as an enema, an ounce or two being dissolved in about 1 pint of warm water and injected into the rectum (this enema should be retained as long as possible). Epsom salts should not be used regularly as a physic; its continuous use is liable to cause constipation.

Dose, from 1 to 4 tablespoonfuls 1 hour before meals.

ERGOT, FLUID EXTRACT.

Ergot is only used to cause contraction of the uterus and control hemorrhage following childbirth or in cases of excessive monthly flow.

Dose, 15 drops to 1 teaspoonful, to be repeated if necessary in 2 or 3 hours.

HYDROGEN PEROXIDE.

A powerful oxydizing agent, possessing bleaching and disinfecting qualities. It is chiefly used in treatment of abscess cavities. In diphtheria

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and tonsillitis it is used as a gargle, spray, or mouthwash. It is usually diluted with equal parts of water, but may safely be used pure.

ICHTHYOL.

Ichthyol is generally used externally, in the form of ointments to be applied on inflamed surfaces. It not only has antiseptic power, but relieves pain when used in erysipelas and various inflammatory diseases of the skin. It is of great value for caked or inflamed breasts, etc. Ichthyol is the best all-round ointment.

IODOFORM.

A valuable antiseptic and disinfectant, used locally in dressing ulcers and wounds. Iodoform may be absorbed through the wounded or ulcerated surface, causing skin eruption and vomiting. In these cases its use should be instantly discontinued. In using Iodoform it is good policy to dust it on as lightly as possible, and never use on a very large surface, as poisoning is liable to occur.

MORPHINE.

Morphine is a dangerous and habit-forming drug, and should not be used except as directed in this book. Its administration should be at-

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tended with great caution, and it should never be given to children.

Morphine in doses of $\frac{1}{8}$ grain (for adults) stops pain, produces sweat, and checks diarrhea. The dose must not be repeated except in case of absolute necessity. It must never be used if the patient suffers from any form of kidney trouble, as it checks the secretion of urine. If quick action is desired, or if the stomach is upset, it may be given hypodermically.

POTASSIUM BROMIDE.

A valuable remedy, especially for children, if carefully used. It is invaluable in convulsions of babies, caused by teething; in whooping cough, sleeplessness, nervousness, and in different forms of nervous affections. It is often used for adults to quiet hysterical attacks, and sometimes gives great relief in the vomiting of pregnancy.

Dose for adults, 10 to 30 grains every 3 or 4 hours till relieved. Under ordinary circumstances from 1 to 2 grains every 2 or 3 hours may be given to infants of a month or two old, while children of 1 year or more may have 3 to 5 grains at similar intervals.

It is well to remember that when bromides are given to babies a pustular rash may appear, even

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after very small doses. Potassium Bromide before being administered should always be thoroughly dissolved either in water or in sirup.

POTASSIUM IODIDE.

Is used principally in the secondary and tertiary stages of syphilis, and sometimes in chronic rheumatism. Its continued use may produce unpleasant symptoms known as "iodism," consisting of watery discharge from the nose, sneezing, severe headache, swelling and redness of the gums and palate, and increased flow of saliva. If these symptoms occur, its use should be discontinued for a short time. In some individuals it produces a pustular eruption of the skin.

Dose, from 5 to 30 grains dissolved in half a glass of water three times a day (after meals).

When giving Potassium Iodide be sure that the patient's bowels move daily, and insist that the teeth and gums be kept clean.

QUININE.

Quinine lowers the bodily temperature in all septic fevers. It may be used with good results in malaria, influenza, pneumonia, pleurisy, pharyngitis, neuralgia, and headache, if periodical in its appearance.

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In small doses it improves the appetite and digestion, and increases bodily strength. On this account it is largely used during convalescence in combination with iron and strychnine in the form of Elixir iron, quinine, and strychnine. Quinine is one of the drugs which children bear well. An overdose causes ringing of the ears and dimness of vision.

Adult dose, from 1 to 3 grains. Dose for children, from ½ grain to 1 grain.

SALOL.

An active intestinal antiseptic; it also has the property of disinfecting the genito-urinary tract. Continued use of it will color the urine green or black. It is often used in combination with Phenacetin as an antipyretic. Salol is largely used in diarrheas, intestinal fermentation, and gonorrhea, and is an efficient remedy in cases of chronic rheumatism.

Dose for adults, from 5 to 10 grains.

SODIUM SALICYLATE.

Is particularly valuable in all forms of acute rheumatism, especially articular; also in tonsillitis. It is sometimes used in neuralgia and fevers. In large continuous doses it causes ex-

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treme sweating, fullness in the head, ringing in the ears, and may upset the stomach.

Adult dose, from 5 to 15 grains.

SPIRITS OF NITROUS ETHER.

(Sweet spirit of nitre.)

A common remedy for diseases of the urinary organs, such as painful urination, pain in the bladder from taking cold, etc. It will usually increase the flow of urine, relieve abdominal pain, produce perspiration, reduce the temperature in fevers, and often relieves pain of the heart in Bright's disease.

Dose for adults, from 15 drops to ½ teaspoonful, well diluted with water.

SPIRITUS AMMONIA AROMATIC.

An aromatic, alcoholic compound, extensively used for stimulating the heart and respiratory tract. It is ordinarily given in collapse, faintness, shortness of breath, and sudden heart failure. It is an excellent expectorant in pneumonia and bronchitis; it is sometimes used to neutralize acidity of the stomach.

Dose for adults as expectorant, from 5 to 15 drops. As a stimulant from ½ teaspoonful to 1 teaspoonful in water.

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STRYCHNINE SULPHATE.

Is prepared from Nux Vomica, and is a great heart and respiratory stimulant. It is one of the remedies that often prolongs life, especially in fevers where the patient has become weak.

Dose for adults, $\frac{1}{60}$ of a grain. If an overdose is given it produces convulsions. So if you notice any twitchings of the muscles after it has been given for some time discontinue its use. For immediate action it should be given hypodermically.

SIRUP HYPOPHOSPHITES.

Used in cases of general debility and in diseases of the nervous system, because of its valuable reconstructive properties. Especially suitable in tuberculosis, chronic bronchitis, rachitis, and scrofula.

Dose for adults, 1 to 2 teaspoonfuls. It is well borne by children, and may be given in doses of from $\frac{1}{2}$ to 1 teaspoonful.

SIRUP IRON IODIDE.

An alterative, possessing qualities similar to those of Potassium Iodide. It is well tolerated by children, and is therefore much used in hereditary syphilis and scrofula.

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Dose for adults, ½ to 1 teaspoonful. For children, 5 to 15 drops.

TINCTURE IRON CHLORIDE.

A very useful drug in anemia, as it increases the iron in the red blood cells and stimulates the heart, nerves, and muscular activity. As all preparations of iron are very constipating, keep the bowels of the patient open with a saline laxative. Iron discolors the teeth, so it should be taken through a glass tube and the mouth rinsed well afterward.

Dose for adults, from 5 to 15 drops; for children, from 2 to 5 drops.

MERCURY PROTIODIDE.

This drug is used chiefly in syphilis in doses of from ⅛ to 1 grain. As Mercury is very irritating to the stomach, and frequently causes salivation, watch its effects carefully, and discontinue its use for a short period if necessary.

Keep the mouth and teeth clean and well scrubbed, and see that the bowels move regularly.

MERCURIAL OINTMENT.

Used as an inunction in syphilitic affections.

SULPHUR OINTMENT.

A specific for scabies or itch.

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TINCTURE IODINE.

Is employed as a counterirritant by painting over the skin, in pleurisy, chronic rheumatism, enlarged lymphatic glands, chilblains, and erysipelas. It is painful when applied to raw surfaces. Tincture Iodine possesses strong antiseptic properties.

TINCTURE OPIUM CAMPHORATED (PAREGORIC.)

Is extensively used in cough and diarrhea mixtures, but must be used with great care, as infants and children are very susceptible to its action. It must never be given to quiet ordinary restlessness or produce sleep.

Dose for adults, from 5 to 30 drops; for infants, from 1 to 2 drops; for older children, from 2 to 5 drops.

VIBURNUM COMPOUND.

An aromatic mixture much used as an astringent, tonic, and sedative in all uterine diseases.

Dose for adults, 1 teaspoonful in ½ glass of sweetened hot water every 3 hours.

WINE OF IPECAC.

An excellent emetic and expectorant, especially valuable when it is found necessary to empty the stomach of undigested food, and in

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croup and bronchitis when it is advisable by the act of vomiting to clear the upper air passages.

Dose for adults and children as emetic, 1 teaspoonful repeated in 5 to 10 minutes till vomiting occurs. As an expectorant, from 2 to 5 drops.

ZINC OXIDE OINTMENT.

Astringent and soothing. It is commonly used as an application to slowly healing wounds, ulcers, and various skin affections.

ZINC SULPHOCARBOLATE.

In moderate doses arrests fermentation in the stomach and intestines and acts as an astringent. It is used mostly in diarrhea and cholera infantum.

Dose for adults, ½ grain to 2 grains; dose for children, ¼ grain to 1 grain.

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CHAPTER IV.

THE ADMINISTRATION OF DRUGS.

The doses of all drugs given in this book are, unless otherwise stated, full doses for adults. The doses for children should be from one-half to one-seventh of the adult dose, according to the age. (See p. 19.)

The drugs supplied in tablet form should always be dissolved in water before being administered to children.

As children do not stand opium well, be especially careful with such preparations as Heroin, Codeine, Morphine, Dover's powder, or any preparation containing opium in any form; when administering, use great caution and never give for the purpose of producing sleep.

In all acute diseases, drugs are to be given without regard to the time of eating. Where medicine is prescribed 3 times a day, it is best to give after meals.

In rectal injections (enemata), warm water may be used with the addition of soap, Epsom salts, olive oil, or glycerin. Have the patient

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lie on the left side with the hips slightly elevated. The fluid should be warm, about blood heat, and in quantity not exceeding 2 pints at one time.

Food can be administered through the rectum in cases of gastric ulcers and different abdominal and stomach obstructions and severe vomiting. Milk and beef juice, preferably with pepsin, are the most suitable fluids. Never give more than 6 ounces at one time and administer 3 to 4 times a day.

HYPODERMIC INJECTIONS.

The hypodermic method of medication is used in all cases in which immediate results are to be obtained. The following details should be carefully observed:

The syringe should be scrupulously clean, and the needle sterilized by passing through an alcohol (or other) flame. The use of a dirty syringe or needle is very liable to cause an abscess. The piston of the syringe should be air tight. The point of the needle should be sharp. Care should be taken to expel all air from the syringe and needle before using. This is accomplished by holding the loaded syringe in an upright position, with the needle pointing upward, slowly pressing the piston to expel two or three drops of the solution. Then insert the needle of the

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syringe beneath the skin, which has been previously carefully cleaned with soap and water, followed by alcohol. Be careful not to insert the needle directly into a blood vessel. Push the piston gradually home; withdraw the needle and press the finger over the puncture to prevent the return of the fluid. The fleshy part of the arms is the most convenient place for an injection.

Only **hypodermic tablets** should be used in the hypodermic syringe. Take one tablet and dissolve in 15 drops of water (in a teaspoon) and boil.

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CHAPTER V.

FOOD FOR THE SICK.

The food for the sick should be prepared from fresh milk and beef, where obtainable. Liquid food is always preferable, as it is easily assimilated by the system and is less irritating to the stomach. Always add a small amount of lime water (two teaspoonfuls to each glass) to condensed milk and cream, which should be previously diluted with water, according to directions on the can.

For convalescents, use the most nourishing food that you can obtain, give in small amounts; consult the preference of the patient.

In all cases where the patient has fever, give water freely. If possible, add to the water a small amount of lemon or lime juice. If not obtainable, use citric acid—crystalized lemon juice—which keeps for an indefinite period and can be obtained from any Alaska drug store.

All drinks in eruptive fevers (fevers accompanied by skin rash) should be given warm, as this helps to bring out the eruption. In cases of fever without eruption, use ice-cold drinks.

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Where vomiting occurs, the drinks ought to be cold and given in small amounts.

For infant patients, follow the rule of feeding which you will find in the section on infant feeding (see p. 38). In vomiting of children, it is better to depend on barley water and meat juice than on milk.

Barley water may be prepared as follows: Take 2 ounces of barley, wash thoroughly, add 2 pints of water, and boil gently till half the liquid remains; strain and cool, and it is ready for use. A small amount of salt or sugar may be added; if barley is not obtainable, use rice or oatmeal instead.

Meat juice may be prepared as follows: Take a piece of reindeer steak, moose meat, or beef, broil slightly, and with a lemon squeezer extract the juice. Give meat juice in small amounts frequently.

Ptarmigan broth. Skin the bird and cut into small pieces, cover with cold water (slightly salted), and boil 2 hours. A small amount of rice may be added.

Fish soup. (Very useful in all diseases where diarrhea exists.) Take 2 pounds of well-cleaned fish, put into a kettle, cover with 2 pints of cold water, add salt, pepper, and a little onion; boil for one hour, and strain through cheesecloth.

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CHAPTER VI.

INFANT FEEDING.

The mother's breast supplies the best article of food for newly born babies, as it contains all the necessary ingredients in proper proportions. At the same time, if the mother's health is impaired by tuberculosis or other wasting disease, lactation becomes injurious not only to the baby but to the mother herself, as it is a great drain on the system.

Breast-fed children should be given a small amount of previously boiled water (1 or 2 teaspoonfuls) several times a day, to assist assimilation.

The infant should be trained to nurse at regular intervals, of from 2 to 3 hours at first, lengthening the intervals as the child grows older. The nursing should average about 20 minutes. The baby may be gradually weaned when 9 or 10 months old.

It is unfortunate for the child if it can not, for any reason, be nursed by the mother, as the mortality in bottle-fed infants is fully four times as great as in those that are breastfed.

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Cow's milk, or fresh reindeer milk where obtainable, is the best substitute for the mother's milk, provided that the animals from which the milk is obtained are healthy. The milk should be diluted with water in the following proportions, and a small quantity of sugar and lime water added:

For infants from—

1 to 2 months old—one-fourth milk, three-fourths water;

2 to 4 months old—one-half milk, one-half water;

4 to 6 months old—three-fourths milk, one-fourth water;

6 to 12 months old—pure milk.

If the baby is troubled with gas, a tiny pinch of baking soda may be added from time to time.

The feeding bottle and nipple must be scrupulously clean. After each feeding the milk which remains in the bottle should be thrown away and the bottle thoroughly cleaned with hot water, to which may be added 2 tablespoonfuls of sand.

The best form of nipple is the simple rubber nipple, without the glass tube. The nipple should be kept in a solution of Boric acid when not in use. Do not allow the bottle to stand

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unwashed after feeding, as the milk attracts flies, which carry on their legs germs of all diseases.

Next to cow's milk, the Eagle Brand condensed milk seems to be the best food for infants in Alaska; at least that is the opinion of the physicians. It should be diluted according to directions on the can. Sometimes this may be modified by the addition of a little malted milk. Always add a little lime water (1 or 2 teaspoonfuls), as you do to cow's milk. As condensed milk is only a partial substitute for the mother's milk, if used alone it predisposes to scrofula, rickets, etc.

Burdick advises the addition of the flour ball, which is prepared as follows: Plain wheat flour is boiled in a bag for 5 hours; then dried, broken open, the rind rejected, and the remainder grated to a powder. Take 1 pint of milk and 1 pint of sterile water and a heaping tablespoonful of boiled flour, a bit of cinnamon bark (to give flavor for certain children), and a pinch of common table salt. The milk is placed on the fire and heated; the flour is rubbed to a fine paste with the water, added to the milk, and brought to the boiling point. When taken from the fire the salt should be added, and the prep-

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aration is then ready to be placed on ice. It should be heated again when used. Two ounces every 2 hours should be given to a child 1 month old. The quantity should be increased ½ ounce every month, while the water is reduced 1 ounce every month.

Overfeeding of infants should be avoided, but at the same time a proper amount of nourishment must be given, as it builds up the constitution for after life. By careful observation the mother herself can usually decide the proper amount of food. If food of proper quality and quantity is given to an infant, there should be no vomiting, no colic, no constipation, and no undigested milk in the stools, and there should be a gradual increase in weight and strength.

In King's Manual of Obstetrics, beginning at p. 278, valuable information on this subject may be found.

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CHAPTER VII.

HINTS ON DOCTORING.

If you are not sure what disease your patient has, treat the symptoms, such as cough, vomiting, fever, etc. Begin all treatments by causing a thorough evacuation of the bowels. Cathartics are beneficial and essential even in some cases of diarrhea. This applies to the diarrheas produced by irritation of the bowels caused by decomposition of undigested or contaminated foods. In cases of this kind the administration of a cathartic removes mechanically the cause of the trouble, and the diarrhea ceases. Castor oil, or calomel, is the most suitable remedy for this purpose.

Always put your fever patient to bed at once. Do not forget that all diseases having fever accompanied by skin eruption are contagious; so quarantine your patient without delay.

The majority of sore throats are also contagious; therefore be careful to destroy the discharges from the nose and throat. Use common sense where your knowledge is not sufficient,

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and do not change your remedies too often. Be cheerful with the sick, and do not forget that kindness often cures, especially with children.

"Just where sickness begins is a difficult matter to decide, but one of the most constant signs of a departure from the normal standard of health is fever."—BRYCE.

In dressing wounds, ulcers, etc., cleanliness is of the first importance. Always wash your hands thoroughly before touching an abraded (or broken) skin. Avoid touching pus, as it is infectious, and be certain to wash your hands after touching or dressing any case.

Be careful in the use of antiseptic tablets containing mercury, as it is often absorbed by the broken skin, and not only salivates but may cause death. Never use a stronger solution of Bichloride of Mercury than 1 to 1,000. It is easily absorbed by the mucous membrane, and its use as a vaginal douche should be avoided.

Do not forget to inquire of the patient whether he passes urine regularly; if not, give sweet spirits of niter and plenty of water.

In all cases of convulsions, do not wait to ascertain the cause, but place the patient in a hot bath. Be sure that the water is not so hot as to scald the patient. If a bath is not obtain-

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able, wrap the patient in sheets wrung out of hot water, cover with blankets, and place hot-water bottles around him to keep him warm. Give to children in convulsions, besides the hot bath or pack, 2 grains of Bromide of Potassium.

As all cough medicines depend for their action on some form of opium, which is a habit-forming drug, discontinue them as soon as the cough stops. The dose of the majority of cough mixtures is a teaspoonful for adults; to children give in proportion.

Do not forget that prevention (as quarantine and separation of patients who have contagious or infectious diseases) saves more lives than any quantity of drugs.

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CHAPTER VIII.

POULTICES AND HOT FOMENTATIONS.

Poultices are widely used. They must always be applied as hot as can be borne, care being taken not to scald the patient. Poultices must be changed at least every 2 or 3 hours, great care being taken not to chill the exposed surface. They should be covered with oiled silk or flannel to retain the heat.

Poultices are used to allay pain and relieve inflammation. If applied over an inflamed area for a long period, suppuration (formation of pus) may result.

Flaxseed poultice is made as follows: Put into a vessel the necessary amount of water, stir flaxseed meal into it until of the consistency of very thick cake batter, then spread smoothly on a piece of muslin or cheesecloth, which should be large enough to fold over the surface of the poultice. Apply, and cover with oiled silk, muslin, or rubber cloth, and bandage firmly to keep in proper position. If more stimulation is required, add to the flaxseed poultice a small amount of mustard (1 or 2 teaspoonfuls to a large poultice).

Mustard paste: Take 1 part of mustard and 6 parts of flour and make into a paste with tepid

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water; spread the mixture on a piece of cloth, cover with cheesecloth, and apply over the seat of pain; let it remain for 5 or 10 minutes, taking care not to blister the skin. The skin of children is very tender; so be careful in applying mustard plasters to infants.

Turpentine stupes: Into a gallon of boiling water add 1 tablespoonful of turpentine, and stir. Soak a piece of flannel of the proper size in this solution and wring out the excess. Apply over the seat of pain and cover with towels or rubber sheeting. Change every 10 or 15 minutes.

Hot fomentations are made by dipping into boiling water several layers of flannel; wring out and apply quickly; change every 10 or 15 minutes.

Fomentations and stupes must be kept warm; where it is impossible to change them so often, apply a hot-water bottle over them.

Dry heat is an excellent remedy for pain, and may be applied by means of hot-water bottles, hot bricks, hot stove lids, hot sand bags, and hot plates. Always wrap the heated object in a heavy flannel cloth, several newspapers, or bath towels before placing it on the skin. In every case where you use hot applications test the heat on your cheek before applying to the patient, in order to prevent burning him.

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CHAPTER IX.

SYMPTOMS.

Fever, or increase of bodily temperature, is best explained as a condition where the production of heat is greater than its relative loss. Fever by itself is merely a sympton of some morbid process, and only significant when combined with other symptoms. With every voluntary or involuntary movement of the body, with every nerve impulse, even with every thought, there is a certain amount of heat produced and distributed throughout the body, to be stored up and used as vital energy.

In cold-blooded animals the vital heat is lost as rapidly as it is produced. In warm-blooded animals this heat does not escape until a certain amount has accumulated within the system. In the human body the production of heat balances evenly with the loss of it, thus making possible the even accumulation of normal heat in a healthy person to a temperature of 98½° F. As the changes of the external temperature vary not only in the different seasons, but change

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constantly, the human body is provided with a delicate mechanism which regulates the heat production and the heat elimination. This mechanism for controlling the temperature is located in the brain and consists of nerve centers from which messages are sent out, as from a central telephone office, to the different organs.

The skin, through its pores, can not only eliminate the excess of heat, in perspiration, etc., but can also reverse the process, thus rendering the escape of heat impossible.

When this mechanism of heat production becomes abnormal the temperature of the body either rises or falls rapidly. This may be due to disorder of the nerve system, to sudden chilling of the body, or to the entrance into the system of vegetable bacteria or animal parasites. The rise or fall of temperature can be accurately determined only by the use of a clinical thermometer.

The most prominent symptoms of fever are abnormal heat and feeling of general uneasiness, dry skin, and sometimes delirium. If the fever is long-continued, the body wastes. In all fevers the urine is scanty and high colored, the tongue coated, the respiration and the pulse rapid.

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The normal temperature of the body in adults is 98½° F.; in children 99. A temperature of 100° F. indicates low fever, 101 to 104° F. indicate severe fever; 105 to 106° F. indicate great danger; 106 to 108° F. indicate impending death.

The best method for taking temperature in children is by rectum. The bulb of the thermometer is annointed with vaseline and inserted in the orifice for 2 minutes. Remember that the temperature per rectum is 1° higher than that by mouth in the same patient. Be sure to shake the mercury in the instrument below 98 before using.

When taking the temperature by mouth, clean the thermometer thoroughly; place the bulb of the instrument under the tongue, and see that the patient's lips are firmly closed. After using, place the thermometer in a weak solution of Bichloride of Mercury.

Subnormal temperature (below 98°) is observed in collapse from shock, from hemorrhage, and in cerebral and spinal diseases; also in convalescence after pneumonia and typhoid fever.

Treatment: The general lines of treatment in all fevers call for a cool, well-ventilated room,

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cathartics, liquid diet, and cold drinks. The patient should be kept quiet. High fever (over 102½°) is best controlled by sponging with cold water twice a day. This bath is given by sponging the whole surface of the body with cold water for a period of 10 or 15 minutes. Be careful not to expose the body to drafts during the procedure. This treatment is absolutely safe; it lowers the temperature, quiets the patient, and gives great comfort and relief.

The Urine.—In diabetes and congestion of the kidneys there is *permanent increase of urine. Frequent and painful urination* is due to inflammation of the bladder, urethra, or to pressure on the bladder by displacement of the uterus or pregnancy. *Diminished flow of urine* results from excessive secretion, as in free perspiration and diarrhea, from congestion, from obstruction of the heart or lungs, and from kidney and liver diseases.

Pain in the abdomen may be due to peritonitis, tape worms, appendicitis, intestinal obstruction, colic, or gallstones. *Pain in the stomach* may be due to constipation, dysentery, cancer, ulcers, dyspepsia, neuralgia of the stomach, etc.

Hemorrhage of the nose may occur in chronic heart, lung, or liver disease, scurvy, infectious

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fevers, typhoid fever, and diseases (or injuries) of the nose.

Respiration.—In the healthy male adult the respiration is about 18 to 20 per minute. *Rapid respiration* is noted in excitement, inflammatory diseases of the lungs, anæmia, hysteria, pleurisy, etc.

Cough.—Dry cough without expectoration is observed in the beginning of inflammatory diseases of bronchi and lungs and in pleurisy. *Moist* (*or loose*) cough occurs in bronchitis, convalescent pneumonia, and tuberculosis. "*Croupy*" cough occurs in croup, whooping cough, tuberculosis, and hysteria, and from foreign body lodged in the larynx.

Treatment of cough: A careful regulation of hygiene, diet, clothing, etc. Brown Mixture or Elixir Heroin and Terpin Hydrate. In acute coughs hot foot baths, a mustard plaster on the chest, the internal administration of hot drinks, and 5 grains of Dover's powder every 3 hours. In croupy cough give Wine of Ipecac, 1 teaspoonful at once, and repeat every 15 minutes till vomiting occurs.

Sputum.—In acute bronchitis and in asthma there is *mucoid* sputum; *watery, frothy* sputum in last stage of pneumonia; *muco-purulent* spu-

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tum in chronic bronchitis, in convalescent pneumonia, and in tuberculosis; *purulent* sputum in tuberculosis with cavities and abscess of the lung; *prune juice* sputum in gangrene of the lungs and in cancer of the lungs; *fibrous-shreds* sputum in membranous croup, in bronchitis, and in diphtheria; *fetid* sputum in advanced tuberculosis and abscess of the lungs.

The Lips.—The color of the lips indicates the condition of the heart and blood. They are always pale in anæmia, and blue in heart diseases. *Dryness* of the lips with formation of crusts is observed in fevers.

The Pulse in adults is between 65 and 80 per minute; slower in old age. At birth it is between 130 and 160, and gradually lessens as the child grows older.

The Teeth.—Delayed dentition may be due to feeding of condensed milk (or prepared food), rickets, or syphilis.

Gums.—Bleeding gums are often associated with scurvy, and may result from large or long-continued doses of mercury.

The Tongue.—*The dry brown* tongue is noted in typhoid fever and diabetes. In scarlet fever it resembles a "strawberry." *A gray-coated*

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tongue with oval bare spots is indicative of gastro-intestinal catarrh. *Scars* on the tongue are often indicative of syphilis or epilepsy.

Foul breath is often due to diseases of the tonsils, caries of the teeth, lung diseases, dyspepsia, etc.

The Appetite.—Inordinate appetite is a symptom of dyspepsia, diabetes, or intestinal worms. *Loss of appetite* is common to many diseases. *Craving for unnatural food* is noted particularly in insanity and pregnancy.

Hiccough results from a spasm of the diaphragm, and is often noted as a temporary condition after eating or drinking. Persistent hiccough is sometimes present in extreme exhaustion following acute or chronic diseases. It may be reflex from stomach, hepatic, intestinal, or peritoneal disease or hysteria.

The Stools.—*Blood in the stools.* Rapidly discharged blood, as in piles and fissure, is nearly normal in appearance. Retained blood imparts a black or tarry appearance to the stools. *Bloody* stools result from inflammation of the bowels, chronic heart and liver disease, scurvy, infectious fevers, piles, and fistula. *Watery* stools are noted in nervous diarrhea, wasting diseases, and corrosive poisoning. *Green* stools

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may result from an excessive amount of bile and are a common symptom in intestinal diseases of children (cholera infantum). *Black* stools may follow intestinal hemorrhage and use of charcoal, bismuth, iron tonic, etc. *Red* stools may be due to the administration of logwood. *Mucous* stools may be due to intestinal catarrh. *Fatty* stools result from undigested fats and the absence of bile. *In typhoid fever* the stools resemble pea soup. *Purulent* stools result from ulceration or abscesses in abdomen.

Vomiting is often due to diseases of the stomach, worms, specific fevers, meningitis, pregnancy, seasickness, etc. *Watery vomit* is noted in nervous dyspepsia. *Bilious or green vomit* may occur in diseases of the liver. *Bloody vomit* may be due to obstruction of the circulation, as in lung and liver diseases, scurvy, infectious fevers, ulcers of the stomach or cancer of the stomach. *Purulent* (*pus*) *vomit* results from an abscess in œsophagus or stomach. *Fecal vomit* due to intestinal obstruction.

Tonsillitis may be a sympton of diphtheria, scarlatina, erysipelas, etc.

Loss of voice may be caused by paralysis, inflammation of the larynx, foreign bodies, or prolonged use of the voice.

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Difficult breathing is noted chiefly in asthma, croup, abdominal distention, tumors, aneurism, pneumonia, phthisis, and heart diseases. Breathing through the mouth, especially when sleeping, indicates *adenoids*, enlarged tonsils, or obstruction in the nose; or it may occur in the beginning of a cold.

Convulsions usually develop from brain diseases, injuries, alcoholism, infectious fevers, anemia, syphilis, hysteria, strychnine poisoning or spinal meningitis. *Reflex* convulsions in young children from gastric irritation, intestinal parasites, and teething.

The Skin.—In anemia, the skin is pale. *Pallor* may result temporarily from exposure to extreme cold, shock, or collapse. *Yellow skin* occurs in jaundice; *blue* in cyanosis.

Enlargement of Veins may result from chronic heart, lung, or liver disease.

The nails may become dry, brittle, and discolored after inflammation or injury or from skin affections. Curving of the nails is observed in all wasting diseases.

Offensive Sweating is frequently associated with rheumatism, Bright's disease, blood poisoning, infection with micro-organisms, and tuber-

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culosis. *Excessive* sweating may be caused by the use of alcohol and by general debility.

Ulcers may be due to local congestion, varicose veins, feeble circulation, syphilis, tuberculosis, or leprosy.

Bedsores are ulcers produced by pressure.

Worms, intestinal.—The only positive evidence of worms is finding them in the stools.

Tidal Wave Breathing (Cheyne-Stokes).—In this type of breathing the respirations gradually increase in rapidity until they reach a climax, then gradually subside and finally cease entirely for 5 to 50 seconds, when they begin again. It is usually a forerunner of death, but cases have been reported in which it has lasted several months.

The Pupils of the Eyes are contracted in opium poisoning, old age, anemia, alcoholism, and diseases of the nervous system. *Dilatation* of the pupils is observed in paralysis, collapse, severe pain, epilepsy, and belladonna and cocaine poisoning.

Noises in the Ears are observed in anemia, in diseases of the ear or heart, and after the use of certain drugs, as quinine and salicylic acid.

Deafness is generally caused by disease of the ear itself, adenoids, or diseased tonsils.

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Delirium may be observed in pneumonia, typhoid fever, anemia, alcoholism, and hunger.

Crying.—*Incessant crying* of a baby is usually due to hunger, earache, colic, pain from an opened safety pin, or soiled napkins, which cause irritation. *Nasal tone crying* of a baby is due to swelling of the mucous membrane of the nose or to throat affections. *Crying during an attack of coughing* is an indication of some painful affection of the chest. *Hoarse cry* of a baby points to catarrh of the larynx or to syphilis. *Whispering cry* is a precursor of membranous croup.

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CHAPTER X.

ERUPTIVE FEVERS.

Measles.—Incubation: 10 to 14 days. Day of rash: Fourth day of fever. Character of rash: It appears first on the forehead and temples, in raised blotchy areas; these later run together. Duration of rash: 8 to 12 days.

Quarantine: 21 days.

Scarlet Fever.—Incubation: 1 to 6 days. Day of rash: Second day of fever. Character of rash: Diffused red (like boiled lobster), studded with minute scarlet dots. Duration: 10 to 12 days.

Quarantine: 5 weeks.

Chicken Pox.—Incubation: 4 days. Character of rash: Raised small elevations, which later become blisters. Day of rash: Second day of fever. Duration of rash: 8 to 10 days.

Quarantine: Until rash disappears.

Erysipelas.—Incubation: 4 to 6 days. Day of appearance of swelling: Second day. Character of swelling: An elevated red spot usually ap-

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pears on the side of the nose and rapidly spreads over the forehead and face. Duration of swelling: 7 to 21 days (relapses are common).

Quarantine until swelling disappears.

Smallpox.—Incubation: 10 to 14 days. Day of rash: Third day of fever. Character of rash: It first appears on the face and wrists as small round, red, hard pimples like shot beneath the skin, which change into blisters and pustules. Duration of rash: 22 days.

Quarantine until the skin is entirely clear.

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CHAPTER XI.

PRACTICE OF MEDICINE.

ABORTION.

The term abortion is applied to the premature termination of pregnancy when it occurs during the first three months of gestation. From the fourth to the sixth month it is called miscarriage. When occurring from the seventh month to the normal term, it is denominated premature delivery.

The causes of abortion may be physical weakness, syphilis, tuberculosis, or general diseases, as typhoid fever, pneumonia, or malaria, sometimes sexual excesses, physical or moral shock, overexertion, blows on the abdomen, or diseases of the womb.

Symptoms of abortion: Cramp-like pains in the back and abdomen; hemorrhage from the womb.

Treatment: Absolute rest in bed; Morphine Sulphate, $\frac{1}{8}$ grain; to be repeated if necessary; Fluid Extract of Viburnum, 1 teaspoonful every 3 hours. Since the greatest danger in abortion is from blood poisoning and retained membranes, surgical care is necessary.

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ABSCESS.

An abscess is the result of an inflammatory process due to infection with pus-producing bacteria, usually through some injury or abrasion of the skin or mucous membrane.

Symptoms: Pain due to compression of the nerves and tissues; redness, due to distention of the blood vessels; heat, and throbbing from increased blood supply; fever, from general infection; fluctuation, when pus is formed.

Treatment: If the case is seen early, an attempt may be made to prevent the formation of pus by painting the inflamed area with Tincture of Iodine twice a day. Local applications of hot compresses are very effective for relieving pain.

As soon as the presence of pus has been determined, the abscess should be freely opened and the cavity thoroughly emptied and washed with Boric acid solution (2 teaspoonfuls to a quart of hot water). It should then be covered with Iodoform gauze, and a surgical dressing applied.

ADENOIDS.

Adenoids are tumor-like growths located behind the soft palate, which interfere with proper nasal respiration and retard the mental development of the child. They are rarely found in

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adults. Persons suffering from them should have prompt attention.

Symptoms: Mouth breathing and snoring, especially during sleep; deformity of the upper jaw; nasal discharge; periodic deafness and pain in the ears. The child is subject to colds, appears listless, and has a dull facial expression. Pupils with adenoids are slow and backward in their studies.

Treatment: Refer to physician for operation, as removal is the only cure.

ANEMIA.

Anemia is a condition of the blood in which there is a deficiency of red blood corpuscles. It may be present in many diseases and conditions.

Symptoms: Unnatural pallor of the skin (yellowish green), loss of strength, shortness of breath, headache, nervousness, coldness of the extremities, heart palpitation.

Treatment: Fresh air, good nourishing food; keep bowels open. Elixir iron, quinine, and strychnine, 1 teaspoonful 3 times a day, before meals.

APPENDICITIS.

May occur at any age and is usually due to errors of diet, constipation, injuries, typhoid fever, tuberculosis, or microbic infection.

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Symptoms: Sudden intense pain midway between the hip joint and the navel on the right side, with rigidity of the abdominal muscles on that side. The patient lies on the back with the right thigh flexed on the abdomen; the temperature is slightly elevated and pulse rapid.

Treatment: Absolute rest in bed; Epsom salts, 1 teaspoonful in half a glass of water, should be administered at once, and repeated if necessary; cold applications over the seat of pain; when the pain is very severe it is often necessary to use Morphine Sulphate, $\frac{1}{8}$ of a grain by mouth. Always call a physician if possible.

ASTHMA.

Asthma is often associated with other diseases of the chest and respiratory tract.

Symptoms: Shortness of breath (due to spasm of the bronchial tubes); intense desire for air, with loud bronchial wheezing; abnormal expansion of the chest, caused by inability to expel the air; feeling of suffocation.

In a few hours the bronchial tubes are usually relieved from the accumulated secretion (which is coughed up and has the appearance of gelatin). These attacks will often occur without any apparent cause.

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Treatment: Asthma can be greatly relieved by change of climate. The attack will be shortened and relieved by the internal administration of Codeine ¼ grain and Potassium Bromide 15 grains (in water). This treatment may be repeated every half hour till relief is obtained.

BACKACHE.

Backache is not a disease, but a symptom which occurs in many forms of disease, both acute and chronic. It is a prominent symptom in malaria, influenza, smallpox, movable kidneys, lumbago, womb trouble, and all infectious diseases. The laity wrongly attribute backache almost entirely to kidney trouble. For treatment see chapter on rheumatism, which describes lumbago.

BED SORES.

Bed sores are local ulcers of the skin, and occur in persons who are compelled by illness or injury to remain in one position in bed for a long time.

Treatment: Frequent change of position and cleanliness will usually prevent the formation of bed sores. The skin should be hardened by bathing with alcohol. After bathing, the part should be carefully dried and dusted with Talcum powder or starch.

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BLOOD POISONING.

Blood poisoning is caused by different germs, or may be produced by absorption of poison from decomposed animal matter. The germs may gain access to the blood through the womb after childbirth or abortion, through wounds, sores, and abrasions of the mucous membranes or skin.

Symptoms: Sharp rise of temperature, rapid pulse, nausea and frequent vomiting, profuse offensive sweating. Death frequently takes place within a few days.

Treatment: Cleanse the wound thoroughly. Give quinine, 3 grains every 3 hours, and a tablet of Strychnine, $\frac{1}{60}$ grain, 3 times, a day. If there is diarrhea, give Tincture opium camphorated (paregoric) 5 to 10 drops, with Bismuth Subnitrate, 15 grains, every 3 or 4 hours. If there is constipation, 2 teaspoonfuls of Epsom salts in half glass of water 3 times a day. For fever, cold sponging. Milk diet. If blood poisoning is due to childbirth or abortion, in addition to the treatment given above use vaginal douches with Vaginal Antiseptic Tablets.

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BRONCHITIS.

Bronchitis is commonly called "cold on the chest." It is sometimes associated with measles and whooping cough.

Symptoms: It frequently begins with sneezing, as "a cold in the head," or with slight chills, which are followed by fever. Patient complains of a pain in the chest which is increased by the act of coughing. The cough is at first dry, but within a day or two it becomes loose, and there is abundant expectoration.

Treatment: Give 1 teaspoonful of Aromatic Cascara Sagrada to move the bowels. Put patient to bed in a warm, well-ventilated room. Allow liquid diet only. Perspiration should be promoted by a hot foot bath, hot drinks, and 5 grains of Dover's powder.

If fever is high, 3 grains of quinine may be given every 3 hours.

Should cough become troublesome give Brown Mixture, 1 teaspoonful every 2 or 3 hours. During convalesence give Elixir iron, quinine, and strychnine, 1 teaspoonful 3 times a day.

BOILS.

A boil is a hard red swelling of microbic origin, which generally ends in suppuration.

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Treatment: Apply locally Tincture of Iodine and hot flaxseed poultices. If pus is present, an incision is necessary, followed by a thorough cleansing with Hydrogen Peroxide. To prevent infection of the surrounding parts, wash carefully with a solution of Bichloride of Mercury 1 to 4,000.

BURNS AND SCALDS.

Burns are produced by dry heat; scalds by steam, hot liquid, or strong acids. The appearance is the same from either cause. Burns may be classified as follows: Slight or superficial burns; mild, when the upper layer of a small area of the skin is destroyed; severe, when all the layers of the skin (of a large area) are destroyed; grave, when the burn extends into the muscles and exposes the bone; and fatal, when the skin of one-fourth, or more, of the entire body is destroyed.

Symptoms: Pain in varying degrees according to the severity of the burn; swelling, ulceration, and sloughing.

Treatment: Severe pain in grave or very extensive burns demands the use of Morphine, $\frac{1}{8}$ of a grain; for children substitute for this Dover's powder, 2 or 3 grains (or Camphorated tincture opium, according to age). To prevent collapse,

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place the patient in bed at once and surround him with hot-water bottles. Cover with blankets and give Aromatic spirits of ammonia, half a teaspoonful in water at once; repeat every hour or two. Regulate the bowels by giving Epsom salts or Compound cathartic pills.

Local treatment: Bicarbonate of Soda (baking soda), made into a thick paste, should be applied to the burned or scalded area with clean gauze or cotton. The exclusion of air from the burn is important, to reduce pain and prevent infection. After the pain subsides, wash with a weak solution of Hydrogen Peroxide, and apply Ichthyol ointment by spreading on gauze and wrapping around the injured parts; cover with cotton and keep in place by bandaging. If the burns are not kept scrupulously clean, erysipelas or blood poisoning may follow.

Burns from carbolic acid may be speedily relieved by immediate washing with pure grain alcohol. For burns of the mouth or throat, caused by swallowing hot fluids or strong chemicals, use oil or the white of eggs.

CATARRH OF THE BLADDER.

Inflammation of the bladder is characterized by uneasiness and a sense of pain over the bladder, with a constant desire to urinate. The

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urine is passed in small quantities, and there is continual pain and a sensation of burning in the urinary organs. There is a considerable amount of mucous mixed with the urine, and in some cases pus or blood.

Treatment: Put patient in bed. In acute cases it will be of great service to give warm hip baths and use poultices or a hot-water bag over the bladder. The urine should be rendered bland by the administration of a teaspoonful of Bicarbonate of Soda in a half glass of water every 2 or 3 hours, and the quantity increased by giving large amounts of water. For constant desire to urinate use Potassium Bromide, 15 grains, with Tincture opium camphorated, 10 drops in water, every 3 hours. Give Salol, 10 grains every 4 hours, until urine is clean. Chronic cases should be referred to a physician.

CHICKEN POX.

Is an acute contagious disease of short duration (about a week).

Symptoms: Slight fever, with appearance of eruption; this eruption resembles small blisters, is scattered over the entire body, and appears in daily crops. There is itching and burning of the skin.

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Treatment: Rest in bed; light diet; application of carbolized vaseline to allay itching and prevent scratching and moderate administration of castor oil is all that will be necessary in the majority of cases. Isolate the patient.

CHILBLAINS AND FROSTBITES.

Symptoms of chilblain are too well known in Alaska to need special description. The treatment is simple, as a few applications of Tincture Iodine speedily effect a cure, providing they are used in time and the parts have not yet ulcerated. Ulcerated chilblains should be dusted with Boric acid or Bismuth Subnitrate and dressed like any other wound.

Symptoms of frostbite: The frostbitten part becomes white and painful. The color of the skin changes later to dark red or purple, and it is sometimes covered with blisters which rapidly change to ulcerations. The frozen part becomes numb.

Treatment: The first steps are important; the patient must not be allowed to enter a heated room. A stimulant, as Aromatic spirits ammonia, 1 teaspoonful in half a glass of water, should be given at once, the patient carried to an unheated shelter, the frozen parts gently

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rubbed; the patient should be warmly covered. As frostbite may occur in different parts of the body, the whole body must be carefully examined. After this, hot coffee, milk, or tea should be administered. If the sensation of cold has left the patient, remove him to a moderately warm room (not too warm), dust the frostbitten parts with powdered Bismuth Subnitrate or Boric acid, and cover with layers of wool or absorbent cotton. Be sure that the frostbitten part is entirely dry before applying any powder, as moist gangrene might result, with great loss of tissue or death. It requires a surgeon to decide when to operate.

CHOLERA INFANTUM.

A disease of young children, caused by micro-organisms taken into the stomach with food. It is extremely dangerous.

Symptoms: Vomiting, diarrhea, high fever; the discharges from the bowels are watery and greenish in color, with offensive odor. The irritability of the stomach causes food to be rejected. The strength is rapidly lost and the baby cries from pain in the bowels, and often passes into a half-unconscious state, from which it may never recover.

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Treatment: Begin treatment by giving 1 teaspoonful of castor oil, and repeat if necessary. This is for the purpose of expelling the infected or fermented food from the bowels. Restrict the diet for 24 hours; give plenty of water and use hot applications over the abdomen. If the fever is high, sponge the child with alcohol and water. For vomiting, Bismuth Subnitrate, 5 grains every 2 hours, and Tinctura opii camphorata (paregoric) 3 drops in water every 3 or 4 hours.

COLIC, INFANTILE.

In most cases is caused by indigestion, overloading the stomach, or unsuitable food. It occurs mostly in bottle-fed infants.

Symptoms: The abdomen is distended and hard; the baby cries sharply and suddenly, drawing up its knees toward the abdomen; the hands and feet are cold; there is pain in the region of the navel; vomiting is very frequent and always violent.

Treatment: Warm the extremities of the child with a hot-water bag. Gentle rubbing of the abdomen is often beneficial. Give a few drops of Aromatic spirits of ammonia internally, and follow this at once with an enema of a few ounces of warm water. A little weak sweetened

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peppermint water, with a tiny pinch of baking soda, relieves some cases.

CONSTIPATION AND CATHARTICS.

Constipation may be acute or chronic.

Treatment: Cathartics and laxatives should be avoided, as they eventually produce intestinal paralysis. The patient should add to his diet fresh or cooked fruit; prunes are especially useful. It is important that a regular hour each day should be selected for evacuating the bowels. For chronic constipation give 1 or 2 Cascara Compound Pills, or Fluid Extract Cascara, 1 teaspoonful at bedtime. Castor oil is the best laxative for children. Epsom salts should be given to adults in doses of 1 or 2 tablespoonfuls dissolved in water 1 hour before breakfast. This flushes the bowels and produces watery stools.

Compound cathartic pills are best taken at night. Dose, 1 or 2 to adults. Do not use them in chronic constipation.

Calomel is of special value in the constipation of biliousness, accompanied by loss of appetite, heavily coated tongue, and a bad taste in the mouth. To adults give ½ grain every hour for 4 doses; then follow with 2 tablespoonfuls of Epsom salts. Repeat if necessary.

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CONVULSIONS, INFANTILE.

Occur in nervous and poorly nourished children. They are an initial symptom in many diseases. The most common cause is an improper quantity or quality of food, or teething.

Symptoms: Twitching of the muscles of the face, hands, and feet. The teeth are gnashed together, and there is frothing at the mouth. The child often becomes unconscious.

Treatment: Hot bath; apply cold-water compress to the head, and weak mustard plaster to the back of the neck. Give Potassium Bromide, 2 grains, in a teaspoonful of water every hour for 2 or 3 hours. An enema of warm water should precede the introduction of drugs. If convulsions are due to teething, lance the gums over the inflamed area with a surgical knife which has previously been well disinfected.

CROUP, SPASMODIC.

Occurs in children of from 2 to 5 years of age. Enlarged tonsils and adenoids, taking cold, or overeating just before retiring are predisposing causes.

Symptoms: Difficult breathing, "croupy" cough, shortness of breath, and, in bad attacks, paroxysms of suffocation.

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Treatment: Hot poultices applied to the throat serve to relieve the spasm. Give 1 teaspoonful of Wine of Ipecac (or Sirup of Ipecac) every 5 minutes until vomiting occurs. After vomiting empty the bowels with an enema and give Potassium Bromide, 3 grains every 3 or 4 hours. Repeat this treatment if the attack recurs.

CORYZA (COLD IN THE HEAD).

Coryza occurs frequently in this country, especially near the coast, where it is moist and the temperature is more variable. It usually follows exposure to cold, particularly if the feet have been damp. It may also occur as the forerunner of measles, whooping cough, scarlet fever, or influenza.

Symptoms: It begins with an attack of sneezing and feeling of stuffiness in the head, accompanied by inability to breathe through the nose. In a few hours there is a profuse watery discharge from the nose, which becomes inflamed and painful. There is frontal headache, with a loss of sense of smell and taste; slight fever. All these symptoms may become more severe, if the cold persists for a length of time, temporarily affecting the hearing and irritating the throat from constant mouth breathing. In a week or so the

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nasal discharge becomes purulent, and the upper lip may become badly swollen. The duration of a common cold is usually from 1 day to 3 weeks.

Treatment: The most successful treatment is a hot mustard foot bath (a tablespoonful of mustard to a bucket of hot water), followed by 10 grains of Dover's powder and copious hot drinks (hot lemonade or tea). Place the patient in a warm bed and cover with blankets, so as to induce profuse perspiration. Give a good cathartic. On the next day, if cold still persists, give a Sâlol and Phenacetin pill every 3 hours. This may be combined with Dover's powder, 2 grains. Applications of vaseline in and around the nose and mouth are soothing and beneficial.

DIARRHEA.

Diarrhea is a symptom of some aonormal condition of the intestinal tract.

Causes: Impure food and water; overeating; exposure of the abdomen to cold. Chronic diarrhea is usually due to tuberculosis of the intestines.

Symptoms: Colicky pains, constant straining and desire to empty the bowels. The stools may be offensive and contain blood. General weakness.

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Treatment: To children give 1 teaspoonful castor oil, to unload the bowels of the offending mass. Repeat the dose in 4 hours if necessary, then follow with 5 grains of Bismuth Subnitrate, combined with Camphorated tincture opium (paregoric), 3 drops every 3 or 4 hours till the diarrhea ceases. No food must be given for at least 12 hours, after which liquid diet in moderation may be allowed.

For adults, follow general treatment as above, substituting calomel, 1 grain, for the castor oil; 4 hours later Epsom salts, 2 tablespoonfuls, should be administered.

The best remedy for checking diarrhea is Zinc Sulphocarbolate given in doses of 1 grain every 2 or 3 hours. In cases of continued bloody stools, give 1 Lead and Opium pill every 4 hours for 2 doses.

In cases of great weakness 1 teaspoonful of Elixir iron, quinine, and strychnine 3 times a day.

DIPHTHERIA.

Diphtheria is a highly contagious disease, usually of childhood. Any suspected case should be immediately isolated and a physician called if possible.

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Symptoms: More or less fever, with spreading inflammation of the mucous membrane of the throat and tonsils; formation of greenish white, slightly elevated membrane over the tonsils; swelling of the neck glands. The child may not appear very sick.

Treatment: Sustain the child from the start with quinine, 1 grain, every 3 hours, and Tincture of Iron, 5 drops in water. A simple gargle of Hydrogen Peroxide will answer all purposes for local medication. Watch the pulse and give strychnine $\frac{1}{100}$ of a grain every 3 hours if it shows a disposition to fail. Always keep the patient in bed. After convalescence the child should be well clad, and a tonic of Elixir iron, quinine, and strychnine given for a long time, as there may be paralysis, or sudden heart failure, long after all danger seems past.

All sputum and nasal discharges should be collected and burned. Dishes, spoons, etc., should be thoroughly sterilized by boiling for one-half hour before being taken out of the sick room. Remember that the only radical treatment is the administration of Antitoxin.

DYSPEPSIA.

Poor digestion is a symptom which accompanies every disease of the stomach.

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Symptoms: Coated tongue, heartburn, headache, sense of fullness and distress over the stomach after eating.

Treatment: Regulate the diet by decreasing fatty and starchy foods and increasing lean meats, reindeer steak, game, and fish. Regulate the bowels. Give Bicarbonate of Soda 1 teaspoonful in ½ glass of water after meals, or half a teaspoonful of Aromatic spirits of ammonia in half a glass of water.

DOG OR OTHER ANIMAL BITES.

Dog bites are of frequent occurrence in Alaska. There is more danger of blood poisoning than of the much-dreaded hydrophobia, as there are no cases of the latter disease on record in Alaska. The bite of any animal may result in blood poisoning, which is due to the decomposed secretion from the mouth, to the unhealthy condition of the animal, which may be suffering from some disease, or to decomposed food adhering to the teeth. All wounds produced by bites (even human) should be promptly attended to.

Treatment: Enlarge the wound if necessary, to produce a free flow of blood. Cleanse thoroughly with pure Hydrogen Peroxide or carbolic-acid solution (1 teaspoonful to 1 pint of warm water). Dress with clean gauze and bandage.

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DISEASES OF THE EYE.

It is important that all inflammations of the eye be treated in the early stages, otherwise blindness or impaired vision may follow. For treating inflammations of the eyes prepare two solutions as follows: Into a 4-ounce bottle put 1 teaspoonful of Boric acid and fill the bottle with boiling water; then shake well till dissolved. Prepare the second solution as follows: Into a 1-ounce bottle put ½ teaspoonful of Argyrol and fill it with water. As Argyrol stains fabrics, be careful not to drop any on the patient's clothing, and wipe the excess from the eyelids with clean cotton. A solution of Bichloride of Mercury will, however, remove Argyrol stains from clothing. Argyrol is a very expensive drug; therefore be careful in its use and do not dispense to patients. For home treatment give them Boric acid solution.

SIMPLE CONJUNCTIVITIS.

Inflammation of the eye (pink eye) may be caused by foreign bodies, dust, exposure to bright sunlight, snow blindness, measles, or eye strain. Dirty or improperly ventilated surroundings predispose to it.

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Symptoms: Eyelids red and swollen; eyeball bloodshot; sensation of roughness, smarting, and itching; flow of tears.

Treatment: If foreign bodies are present, remove them at once by carefully everting the eyelid over a pencil or a match stick covered with cotton. Tell the patient to look down or to rotate the eyeball, and when the foreign body appears carefully but quickly wipe it away with the point of a cone previously prepared from a clean handkerchief or gauze. If the foreign body is under the lower lid, draw this lid downward and ask the patient to look up. For inflammation, thoroughly wash the eye with a medicine dropper full of Boric acid solution, then follow with 2 drops of the Argyrol solution. Repeat this treatment 2 or 3 times a day, according to the severity of the case.

PURULENT CONJUNCTIVITIS.

Inflammation of the eye with pus (matter). This form of conjunctivitis is due to microbic infection and is most dangerous to the eyesight. The severest form of it, due to infection from gonorrheal discharge, is often present in newborn babies, the eyes having been infected by discharges from the mother during labor.

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Symptoms: In addition to those of simple conjunctivitis, the eyelids are greatly swollen, so that it is impossible to open the eye, and there is a discharge of pus from between the lids.

Treatment: This pus is very contagious, and great care should be exercised in handling such cases. The hands of the person treating the case should be well washed and disinfected in a Bichloride solution 1 to 1000. All bandages and cotton coming in contact with the discharge should be burned, and the family must be warned in regard to the contagious character of the disease, and the proper manner of handling the case. In cases where only one eye is affected the other should be protected by bandages, and in small children the hands should be tied to prevent the possibility of carrying the disease from one eye to the other by the hands. The eyelids should be opened sufficiently to admit the proper instillation of the solutions. Wash thoroughly with Boric acid solution until all signs of pus have disappeared, then instill the Argyrol as mentioned in simple conjunctivitis. This treatment should be carried out every 2 hours.

Between the treatments the application of ice to the eyelids is both beneficial and soothing. The ice should be wrapped in clean gauze or

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cloth. Remember that this is one of the most serious conditions of the eye, and a physician should treat the case whenever possible.

To prevent the disease in newborn babies, where the mother is suspected of having gonorrhea, a 25 per cent solution of Argyrol dropped into the eyes of the infant just after birth and repeated twice a day for 2 days is effective. As a matter of precaution, it is advisable to administer this treatment to all babies, as it is absolutely harmless. There are many physicians who practice this as a routine treatment at all cases of confinement, even among white people. A 25 per cent solution of Argyrol can be made by dissolving ½ teaspoonful of Argyrol in 4 teaspoonfuls of water.

CONJUNCTIVITIS WITH GRAY SPOTS.

This is a form of inflammation with grayish white spots on the eyeball. It occurs in scrofulous children.

Symptoms: Small grayish-white (sometimes red) spots over the eyeball; the flow of tears is increased; the symptoms are intensified by bright light; pain in the eyes and temples; mass of scar tissue on the lids. Ulceration of the eyeball is a serious complication. This disease

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is chronic, and the danger of ulceration and impairment of the vision is great.

Treatment: Wash the eye 3 times a day with Boric acid solution and follow with Argyrol. Take a few grains of calomel or Iodoform powder on the end of a card and dust it into the open eye, and then gently massage the closed eye in order to spread the powder all over the surface of the eyeball. This should be performed 2 or 3 times a week. Internal medication is very important in these cases. Give Syrup of Iodide of Iron in doses, to children, of 5 to 15 drops after meals; or, where this is not obtainable, substitute for it Syrup of Hypophosphites Compound, 1 teaspoonful after meals. Protect the eyes with colored glasses.

SNOW BLINDNESS (SOLAR CONJUNCTIVITIS).

Snow blindness always occurs in early spring, as a direct result of the rays of the sun reflected from the snow. This condition can be easily produced artificially by reflecting the rays of the sun from a small mirror directly into the eye for a short period.

Symptoms: Eyeballs red, the superficial blood vessels greatly distended; pupils contracted; a sensation as of sand in the eyes; pain and throb-

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bing behind the eyeball; complete or partial blindness; and the patient staggers as if under the influence of alcohol.

Treatment: Snow blindness is easily prevented by the use of colored glasses, by painting around the eye with soot, by using a dark-colored mask (which may easily be made from a black or blue handkerchief or piece of cotton lining), or by using the Eskimo snow glasses, made of wood or bone, with a slit in the center. The medical treatment consists in dropping Argyrol solution into the eyes 3 times a day; cold applications and confinement to a dark room for 2 days.

GRANULATED LIDS (TRACHOMA).

A variety of conjunctivitis with granular lids and a mucopurulent discharge. This discharge is the medium by which the disease is carried from one person to another. The affection is chronic and likely to impair the vision, or even produce blindness.

Symptoms: The earliest symptoms are swollen lids, with a profuse mucopurulent secretion. Later, small, red granular masses cover the entire surface of the lids; these finally change to scar tissue.

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Treatment: Enforcement of personal cleanliness and the use of individual towels should be insisted on in the home of the patient. The family should be thoroughly instructed in regard to the contagious character of the disease and the method of preventing it from spreading to the other members of the family. Nourishing food; outdoor exercise; frequent washing of the eyes with Boric acid solution and the use of Argyrol in cases where pus is present.

Trachoma is a self-limited disease which yields very slowly to treatment and requires the care of a physician for a long time to effect a cure; cleanliness will, however, prevent any defect of vision in most cases. Trachoma is considered to be a dangerous contagious disease by the Government, and immigrants who are afflicted with it are forbidden entrance into the United States. Cases of trachoma should be reported and treated by a physician.

SKIN DISEASE OF THE EYELIDS.

Eczema is one of the most common of the diseases that afflict the eyelids. Inflammation, itching, and moisture make the diagnosis easy. *Treatment:* For simple cases, apply Zinc oxide ointment.

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Erysipelas of the Eyelids occurs during the course of facial erysipelas. Treatment should consist of applications of Ichthyol ointment over the eyelids.

Blepharitis Squamosa: A chronic disease of the margin of the eyelids, characterized by the formation of scales or crusts, the falling out of the eyelashes, and a tenacious secretion which often glues the eyelids together. Blepharitis occurs in anemia, scrofula, and eruptive fevers; from neglect of cleanliness and from exposure to wind and dust. It is not contagious.

Treatment: This depends upon the cause. When constitutional treatment is needed, Sirup Iodide of Iron and cod-liver oil are indicated. Local applications are useful only after thorough removal of the scales and crusts. This is best accomplished by carefully washing the margins of the lids with Boric acid solution; after drying apply Ichthyol ointment by well rubbing it along the margins of the lids with a swab composed of a toothpick upon which a piece of cotton has been wound. Do this twice a day.

EYELIDS—DISEASES OF THE GLANDS.

Styes are the result of a suppurative inflammation of the glands of the eyelids. Swelling and redness occur over the site of the gland, and

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increase for a few days; after spontaneous evacuation of the contents all inflammatory symptoms rapidly subside. Treatment consists in hot applications over the eyelids.

INJURIES TO THE EYELIDS.

The eyelids are often the seat of wounds, burns, and scalds. As the result of injuries to the eyelids or to the eyeballs, abscesses are common; and as the result of burns and scalds, ulcers sometimes occur.

Treatment: The best treatment immediately after the injury is the application of ice over the closed lids.

INJURIES TO THE EYEBALL.

The eyeball is often injured by blows and falls, dust, cinders, etc. Gunshot wounds may produce immediate blindness. Injuries to the eyeball should be treated according to the rules of surgery, the first principle of which is that the wound and everything that comes in contact with it should be absolutely clean. By raising or turning the lid the foreign body is removed. Great mischief is sometimes done by applying poultices. The inflammation produced by burns is best treated with cold applications. In severe

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injuries the lids should frequently be lifted from the eyeball in order to prevent adhesion.

HEMORRHAGE OF THE EYEBALL.

This occurs during the course of violent coughing, vomiting, and in old age. Injuries to the eyes are most frequent causes.

Treatment: Cold applications to the eye.

PTERYGIUM.

Pterygium is a triangular-shaped growth over the eyeball, which begins in one corner and gradually grows toward the pupil. It may remain stationary for a long time or grow until it covers the pupil, interfering seriously with the vision.

Treatment: A pterygium should be removed by a surgeon when it obstructs vision.

KERATITIS.

This is an inflammation of the cornea of the eye. The cornea is the outer membrane of the eye, that portion encircled by the white membrane. The pupil is located in the center of the cornea. The cause of Keratitis among the natives is usually inherited syphilis, germ infection, or injuries.

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Symptoms: In Keratitis there is pain in the eye, especially when exposed to light, excessive flow of tears, and some inflammation of the conjunctiva. The cornea, instead of being clear, is opaque and appears to be sprinkled with minute gray dots. Ulcers are present in the later stages. The result of neglected treatment is defective vision from the formation of opacities over the pupils.

Treatment: Keep the eye clean by washing with Boric acid solution, after which use Argyrol. Internally give Sirup Iodide of Iron, 15 drops to children 3 times a day; and 2 Protiodide of Mercury pills 3 times a day to adults. Regulate the diet and bowels.

CATARACT.

Cataracts are very prevalent among the natives of Alaska. A cataract is an opacity of the lens. It is generally due to old age, but may occur in younger people from injury. Do not confuse opacity of the cornea with cataract. Cataract appears as a gray spot in the pupil, located deep in the eyeball. A corneal opacity is superficial, irregular in shape, and may extend beyond the margin of the pupil; it is a result of some former inflammation of the cornea. The

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vision in an eye with cataract gradually diminishes until nothing but perception of light is possible.

Treatment: The only treatment is surgical. Cataracts can be removed only when ripe, and the results are not always successful.

Always remember that the eye is a very delicate organ, one which even a general practitioner will hesitate to treat when a specialist is at hand. Therefore be careful in all manipulations about the organ, and remember that cleanliness is the key-note to all successful treatment. Refer all eye cases to a physician as soon as possible.

EARACHE.

Earache may be due to neuralgia, impacted wax, or foreign bodies in the ear; but the most common cause is inflammation of the middle ear. Acute inflammation of the middle ear is generally preceded by sore throat and slight fever. Decayed teeth sometimes cause earache, and should promptly be attended to by a dentist.

Treatment: The simplest method of treating earache is by the application of dry heat, as a hot-water bag or hot brick or plate placed over the ear. If pain is not relieved by this, hot irrigations should be used every 2 or 3 hours.

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Hang a fountain syringe 2 feet above the patient's head; put into it 1 quart of hot water in which a tablespoonful of Boric acid has been dissolved; use the smallest tip, and allow the fluid to pass into the ear canal. Catch the returning fluid in a vessel placed under the ear. Wipe the ear dry with cotton. For very severe pain, in addition to the above give $\frac{1}{8}$ grain of Morphine to adults, and repeat after 4 hours if necessary.

ECZEMA.

Eczema is an inflammatory, noncontagious disease of the skin, which is prevalent in Alaska among both natives and white people. The most characteristic part of the eczema is the variety of eruptions. The appearance of the affected skin varies in color from scabby white to reddish violet. The eruption varies from the size of a pinhead to very large patches, and sometimes the skin cracks deeply, producing open wounds. In some cases among the natives the skin becomes like tanned leather, and the eruption resembles large warts.

Eczema is always active, varying in character in the same patient from day to day. It usually begins with the formation of a few blister-like vesicles, red and swollen, which in a few days

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become dry, covering the skin with a crust. About a week later this crust degenerates and becomes a pasty scab, oozing with pus, which soon assumes a yellowish-brown color. The same eruption a few weeks later may discharge bloody serum.

Eczema is generally found on the face, hands, and other extremities, but no portion of the body is free from its attack. Native children suffer with eczema of the face, scalp, nose, ears, and eyes. Indigestion and fermentation in the stomach are common causes of this disease. Some cases are of nervous origin.

Treatment: It is important that no soap or water should come in contact with the skin lesion. Wash and remove the crusts with olive oil and apply Zinc oxide ointment twice a day. In cases where the entire face is affected, cut a mask out of cheesecloth or sheeting, spread the ointment on this, and apply to the face. Prevent the child from scratching by tying the hands or by applying splints along the arm and forearm, to prevent the forearm from being flexed.

The diet is of great importance. It should be light and must not contain much fat or starch. Alcohol, tea, and coffee are absolutely forbidden.

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If the bowels are sluggish, a good laxative should be administered quite often. For scrofulous children suffering with eczema, give Sirup Hyphosphites Compound, ½ teaspoonful, 3 times a day.

In eczema of the scalp, Sulphur ointment is efficient, providing the crust is softened and removed prior to the application. Where cracking of the skin occurs, use frequent applications of cod liver oil.

EPISTAXIS (NOSEBLEED).

Nosebleed is a symptom in many diseases, as anemia, scurvy, typhoid fever, diphtheria, etc. It is most common at the age of puberty, and in females may replace menstruation wholly or in part.

Treatment: The head should be kept erect. Applications of cold (as ice) to the back of the neck often prove effective. Inject into the nostrils salt water, vinegar, or lemon juice. Hydrogen Peroxide has been found a reliable remedy to check nosebleed temporarily. If, in spite of these measures the bleeding continues, it will be necessary to tampon or plug the nostril. A soft piece of cotton, linen, or gauze is introduced into the nostril and packed in tightly.

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ERYSIPELAS.

This disease is common in the north. It is partly due to poorly ventilated houses and lack of cleanliness. The disease itself is caused directly by the germ of erysipelas and is highly contagious. It is characterized by a peculiar swelling of the skin, generally that of the face and neck. This swelling is dark red, and has a tendency to spread and become puffy. The border of the swelling is sharply defined. It often attacks open wounds, and is not uncommon in poorly ventilated hospitals.

Symptoms: Sudden chill, followed by fever which frequently reaches 105°; rapid pulse; coated tongue; pain in the extremities, and violent headache; convulsions may occur in children. The eruption appears at first as a red spot usually on the side of the nose, spreading rapidly, and presenting a reddish-purple glistening appearance. The eyes are generally closed completely, and the features greatly swollen and distorted. Erysipelas has a tendency to recur.

Treatment: Isolate the case and administer a cathartic at once. Local treatment consists in painting the lesion and part of the surrounding skin with pure Tincture of Iodine. The healthy skin is treated in order to check the progress of

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the disease. In applying the iodine, care should be taken not to drop any of it into the eyes; tell the patient to keep the eyes closed while making the application. After this, Ichthyol ointment should be spread on a cloth and applied to the face. Where the use of iodine causes too much pain, the ointment should be used alone twice a day. Apply iodine once every other day until the disease is checked. Administer internally Tincture of Iron, 15 drops in ½ glass of water 3 times a day. In cases of debility give Elixir of iron, quinine, and strychnine, 2 teaspoonfuls to an adult every 4 hours. While attending a case of erysipelas, avoid touching or dressing any wound or abrasion, or you may convey infection.

GANGRENE.

Gangrene is the death of the tissue in any part of the body, and is often the direct result of burns, frostbites, gunshot wounds, injuries, etc. There are two distinct types of gangrene—moist and dry.

Moist gangrene is accompanied by a good deal of swelling, pain, and rise of temperature. The gangrenous part is at first of a dark red color, which quickly changes to a deep purple with greenish spots, surrounded by an inflamed area.

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Moist gangrene usually ends in extensive ulcerations with a very offensive discharge.

Dry gangrene is often observed in Alaska from severe frostbite. It usually involves the extremities. The affected parts become black, shrink, and dry up, resembling the appearance of a mummy. These parts are very brittle and will often break as easily as a dry twig.

Treatment: Moist gangrene should be bathed frequently with solution of Bichloride of Mercury, 1 to 4,000, then dried thoroughly and dusted with Iodoform. In the majority of cases amputation is necessary.

GONORRHEA (CLAP).

Gonorrhea is a contagious disease of the genital organs. The symptoms are a sense of itching or heat, discomfort caused by urinating, profuse greenish-yellow discharge from the genital organ.

Treatment: Diet should consist of liquids, and the patient should be encouraged to drink plenty of water. Internally give Salol, 15 grains every 4 hours; keep the patient in bed, to prevent any complications. Warn him concerning the contagious character of the discharge and especially the danger of carrying the infection to the eyes

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by his hands. Painful urination will be relieved by immersion of the genital organ in hot water when emptying the bladder. The scrotum should be supported by a suspensory bandage.

INDIGESTION (ACUTE).

An acute inflammation of the mucous membrane of the stomach, accompanied by loss of appetite, occasional vomiting, pain in the stomach, and constipation. The disease is most common in adults, and is usually caused by improper food or overeating.

Symptoms: Heavily coated tongue, bad taste in the mouth, foul breath, vomiting (at times), headache, and a feeling of weight in the stomach, accompanied by colicky pains.

Treatment: Give a teaspoonful of Wine of Ipecac every 10 minutes until vomiting occurs; mustard or hot salt water will serve the same purpose. Empty the bowels with calomel, 1 grain. Allow the stomach to rest by withholding food for 24 hours, after which give liquids only, and gradually return to regular diet.

HEADACHE.

Headache is a symptom of many diseases. Therefore treat the disease, wherever it is recognized, and the headache will be relieved. The

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patent headache powders sold at drug stores usually depend on Acetanilid for their effect. They are dangerous and are responsible for many deaths.

Headaches may be due to the toxins which develop in all infectious diseases; in these cases thay are usually of short duration.

Headache due to derangements of the stomach is usually recognized, as the pain is generally very dull, and affects the forehead mainly; with this there is a heavily coated tongue.

Nervous headache, or migraine, is characterized by the patient complaining of discomfort and distress in the head, more than of actual pain. This discomfort usually disappears as soon as the patient goes to sleep. In this type of headache there is often vomiting unaccompanied by nausea. Fainting frequently occurs and usually relieves the condition.

The headache due to eyestrain is always accompanied by deep-seated pain in the eyeballs. It is always increased by attempting to read or write.

Headaches due to different lesions of the brain are the most severe, and there is always some deafness, vomiting, and convulsions.

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Treatment: Toxic headaches seldom require more than the application of an icebag to the head. Migraine should be treated by free administration of Epsom salts and Sodium Salicylate, 10 grains; repeat this in 4 hours if pain still continues. If pain is not relieved give Potassium Bromide, 15 grains. Headache due to derangement of the stomach is best treated by regulating the diet, and by cathartics, adopting the treatment described for dyspepsia. For headache caused by eyestrain the patient should consult an occulist. Meantime treat as you would nervous headache.

For headache due to lesion of the brain use an icebag on the head, and give Potassium Bromide, 15 grains every 3 hours.

HEART DISEASE.

Heart diseases are either organic or functional, and may occur as complications in other diseases. A proper diagnosis and treatment can be determined only by a physician after a careful examination of the patient. The general symptoms are shortness of breath, palpitation, shooting pain over the heart, blue lips, dropsy.

General treatment: Absolute rest in bed for a number of days allows the heart to rest and is an

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essential part of the treatment of all forms of heart disease. Regulate the bowels and restrict the diet. For distressing shortness of breath give Morphine, $\frac{1}{8}$ of a grain every 3 hours until relieved; at the same time prop the patient up in bed and open the windows. In threatened heart failure give 1 teaspoonful of Aromatic spirits of ammonia in water and repeat in 10 minutes if necessary. Apply hot-water bottles to the feet and body. It is important to caution all persons suffering with heart disease to avoid violent exercise.

HEART PALPITATION.

Palpitation (or fluttering action) of the heart may be due to mental excitement, fright, excessive use of tobacco, alcohol, coffee, or tea; frequently to gas or acid in the stomach.

Treatment: Place the patient in bed and assure him that there is no danger. This will do much to restore cheerfulness and shorten the attack. Apply cold compresses or icebag over the heart. The administration of Aromatic spirits of ammonia, 1 teaspoonful in water, is useful.

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HAEMOPTYSIS.

(Hemorrhage from the lung.)

This is a symptom of tuberculosis; it is usually preceded by cough. When hemorrhage occurs it indicates that the breaking-down process of the disease has reached some blood vessel in the lung; the amount of bleeding depends on the size of the vessel. The hemorrhage rarely causes death when it occurs during the early stages of the disease. Very large hemorrhages are caused by rupture of a large vessel and may be immediately fatal. Hemorrhages from the lungs may last only a few minutes or may continue for several days. All bleeding from the mouth does not necessarily come from the lungs, but may result from ulceration of the stomach or gums. Small streaks of blood in the sputum may be due to nasal catarrh. In hemorrhage from the lungs, the blood is bright red, foamy, and is coughed up; the patient's condition indicates lung disease. Blood from the stomach is vomited up and is of a dark color, often mixed with food, and the patient usually complains of stomach trouble.

Treatment: Absolute rest in bed; ice bag over the chest; a piece of ice may be held in the mouth and slowly swallowed. As coughing increases

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hemorrhage, Morphine in dose of $\frac{1}{8}$ of a grain may be given to quiet it (or Dover's powder, 5 grains every 3 hours). A mild laxative may be administered to relieve blood pressure.

HEMORRHOIDS (PILES).

A mass of dilated or varicose veins or tag of inflamed skin around the rectum. The most common cause of piles is constipation.

Treatment: The best treatment for external piles is a hot compress, to relieve pain and reduce inflammation. Sitting over a vessel of very hot water is soothing. Locally, apply Ichthyol ointment. In some cases an operation may be necessary. It is essential to regulate the bowels to produce at least one movement a day. Give Extract Cascara Aromatic, 1 teaspoonful at bed time.

HERPES (COLD OR FEVER BLISTER).

Cold sores are due to exposure to cold, typhoid fever, pneumonia, or disturbances of the stomach. If there is much burning and itching, apply Zinc Oxide ointment or cold cream.

HERPES ZOSTER (SHINGLES).

An acute inflammatory disease of the skin, characterized by neuralgic pains and eruption of

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vesicles. The eruption consists at first of a small area of inflamed skin, bright red, and sensitive to pressure. In a few hours vesicles appear, containing a clear fluid, which later becomes cloudy or pustular. In two or three weeks the vesicles usually dry up, leaving brownish scabs.

Treatment: Administer a cathartic. Give 2 Phenacetin and Salol tablets every 3 hours. Locally, apply Zinc Oxide ointment twice a day or paint the vesicles with Collodion.

HIVES (URTICARIA).

This is a sudden general eruption, resembling severe mosquito bites; is associated with intense itching of a stinging character; is always of short duration and readily yields to treatment. The majority of cases are due to some disturbance of digestion. Eating strawberries, shell fish, or oysters may produce this condition in some people.

Treatment: Regulate the diet. Fluid Extract Cascara Sagrada, 1 teaspoonful should be given every night. Sodium Salicylate, 10 grains every 2 hours for 3 doses. Locally, applications of carbolized vaseline.

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INFANTILE PARALYSIS.

An acute infectious disease occurring in children, rarely in adults. It is contagious and occurs in epidemics, sometimes with high mortality. It has been demonstrated recently at the hygienic laboratory of the Public Health Service that infantile paralysis may be transmitted through the bite of the stable fly, which is smaller than the common house fly. This fact is important when combating an epidemic of the disease. Manure piles are the breeding places of these insects, and should not be tolerated in any community.

Symptoms: The onset is sudden; a child apparently well is attacked during the night with vomiting, fever, pain in the head and along the spine. This is followed by paralysis; either the upper or lower limbs, or both, may be affected. The location and extent of the paralysis depends upon the extent and location of the inflammatory process in the spinal cord. The child is often unable to walk or to raise the arms. This paralysis gradually improves and partial function of the limbs is restored, but there usually remains some permanent paralysis. In some cases deformities of the feet and hands and atrophy of the muscles are ultimate results.

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Treatment: As there is no specific for this disease, treat the symptoms. Isolate the patient and destroy by burning all discharges from the nose and throat, as they may convey the contagion. Sponge with cold water to reduce fever, and apply an ice bag to the spine. Open bowels with castor oil, 1 or 2 teaspoonfuls, and give light diet. The disease is contagious in the acute stage. Three weeks after the onset of the disease the paralyzed limbs should be massaged daily with chloroform liniment, and a teaspoonful of Elixir of iron, quinine, and strychnine should be administered 3 times a day.

INFLUENZA (LA GRIPPE).

An acute, contagious fever occurring in epidemics and associated with catarrhal inflammations. The disease is due to bacteria. The onset is sudden, with chills and fever, pain in the joints and muscles, shooting pain in the eyes, sneezing, deafness, bronchial cough, the tongue furred; vomiting may occur. The fever declines in 5 or 6 days, but relapses are common. It may be mistaken for a "bad cold."

Treatment: Open the bowels with 1 grain of calomel; then give Salol and Phenacetin, 2 tablets every 3 hours. If vitality is low, administer

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Elixir iron, quinine, and strychnine, 1 teaspoonful every 4 hours.

JAUNDICE.

Is due to gallstones, obstruction of the bile duct, or inflammation of the liver, and is present in some febrile diseases. The symptoms are coated tongue, fetid breath, sense of fullness after eating, sometimes nausea and vomiting. There is always constipation, and the stools are light-colored and extremely foul; the skin and eyes become yellow.

Treatment: Exclude from the diet fatty articles. Milk is the most suitable food. Extract Cascara Sagrada Aromatic, 1 teaspoonful, should be given twice a day, or calomel, ½ grain, every hour, till bowels move; follow with Epsom salts.

KIDNEY CONGESTION.

May be caused by sudden chilling from exposure to cold, or be due to diseases of the heart, lungs, or liver, or due to pregnancy.

Symptoms: Dull pain in small of the back; scanty urine, which may sometimes contain a little blood; the pulse is increased, and there is a slight variation of temperature.

Treatment: Liquid diet; the patient should be kept in bed; cloths wrung out of hot water may

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be applied over the kidneys; instruct the patient to drink water freely; Epsom salts, 2 teaspoonfuls in half glass of water every day; sweet spirits of niter, 10 drops in half glass of water 3 times a day.

Diseases of the kidneys can be diagnosed and treated intelligently only after an examination of the patient's urine.

LICE.

For head lice, apply equal parts of kerosene and olive oil to the scalp. For nits, use vinegar. Where the hair is long, it should be clipped.

MEASLES.

Highly contagious; the poison may be transmitted through clothes or nasal and bronchial secretions; incubation period, 10 days; prodromal stage, 3 days, attended by running of the nose and eyes; sneezing, coughing, and rise of temperature; slight fall of temperature on the third day, after which it rises again. Scaling of the skin begins about the fourteenth day.

Symptoms: Cold in the head, persistent sneezing, a watery discharge from the nose, red, inflamed eyes with flow of tears. In a day or two a cough appears. There is a marked elevation of temperature. The eruption appears on the

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face about the fourth day and rapidly spreads over the entire body. It is composed of small, dark-red papules in groups. In the hemorrhagic or malignant form of the disease (black measles), hemorrhages occur from the mucous membranes.

Complications in measles are pneumonia (which may develop into tuberculosis), whooping cough, eye and ear inflammations.

Treatment: The contagious nature of the disease should be kept in mind, and proper quarantine enforced. Isolation in a darkened and well-ventilated room is imperative. Administer sweet spirits of niter, 5 drops in water every 2 or 3 hours. When the cough is severe, envelope the chest with a cotton jacket and give Brown Mixture, 1 teaspoonful every 2 hours. The thirst is relieved by lemonade. Drinks are to be given hot if the eruption is tardy in making its appearance. Milk and beef juice are the best foods in most cases. Relieve constipation by enemas of warm water or by castor oil. To relieve the itching, rub the body with carbolized vaseline. In severe cases give Aromatic spirits of ammonia, 15 drops in water every 3 hours. Treat complications as they arise.

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MENINGITIS (BRAIN FEVER).

Meningitis is an inflammation of the membranes of the brain and spinal cord. Its causes are injuries to the skull, tuberculosis, syphilis, and chronic suppuration of the middle ear.

Symptoms: Fever and rapid pulse, persistent headache, uncontrollable vomiting, dizziness and delirium, twitching of muscles, retraction of head, with rigidity of the neck; later, unconsciousness.

Treatment: Calomel, ½ grain every 3 hours. Epsom salts every morning. Icebag to the head and back of the neck. For convulsions in adults: Morphine, ⅛ of a grain every 4 hours; for children, Potassium Bromide 10 grains every 3 hours. Liquid diet.

MUMPS.

Mumps is an inflammation of the salivary (parotid) glands, very contagious and of short duration. The symptoms are chills and moderate fever, followed by a swelling below and in front of the ear; movements of the jaw are painful; often the inflammation suddenly subsides, to reappear in the testicles in the male or in the ovaries or breasts of the female.

Treatment: Rest in bed; cathartics; isolate the case and apply Ichthyol ointment to the

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glands twice a day; cover with cotton and bandage.

NEURALGIA.

Occurs during middle life and is generally hereditary. The symptoms are pain, associated with a sensation of heat or burning; in many cases a marked periodic tendency; pain changes from one locality to another. Any nerve of the body is liable to be attacked.

Treatment: 1 teaspoonful of Fluid Extract Cascara Sagrada, to open bowels; external application of heat to the seat of pain, and internally 2 tablets of Salol and Phenacetin every 4 hours.

NEURASTHENIA (NERVOUS PROSTRATION).

A peculiar nervous weakness, associated with loss of memory and energy and with exhaustion. Even a small amount of labor, especially mental, will produce great fatigue and in advanced cases muscular twitching, and sometimes hysteria.

Symptoms: Headache, with tenderness over the scalp, tenderness along the spine, numbness of skin, temporary weakness of vision, loss of sexual power, imaginary loss of memory, fear of possible enemies, insomnia.

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Treatment: Rest, good food, change of scenery; Fluid Extract Cascara Sagrada, 1 teaspoonful at bed time; Elixir iron, quinine, and strychnine, 1 teaspoonful before meals.

ORCHITIS.

(Inflammation of the testicles).

Inflammation of the testicles may be induced by exposure to cold, by mumps, or injuries, but the most common cause is gonorrhea.

Symptoms: Dull pain in the groin, slight fever, nausea and faintness; the testicles become swollen, red, tense, and extremely tender; if due to gonorrhea, there is a yellowish discharge from the urethra before swelling appears.

Treatment: Rest in bed is essential; locally use flaxseed poultices, frequently changed, or Ichthyol ointment. Internally a moderate dose of Epsom salts. When the patient recovers, advise a suspensory bandage to prevent recurrence. If the attack is due to gonorrhea, give Salol, 10 grains 3 times a day.

PERITONITIS.

Peritonitis is inflammation of the peritoneum (the membrane which covers the intestines). This membrane is very sensitive to long exposure to cold or external blows, and often becomes

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infected from perforation of the intestines, stomach, or appendix. Other causes are tuberculosis and blood poisoning.

Symptoms: Severe pain in the abdomen, which is very sensitive to the touch; slight chills and fever; nausea accompanied by severe vomiting, constipation; the abdomen is rigid (hard) and greatly distended; respiration short and rapid.

Treatment: It is important to remember that the application of heat (as hot-water bottles or poultices) is injurious, as it hastens the formation of pus. A rubber bag filled with finely cracked ice is always beneficial; providing it is not too heavy. For adults, Dover's powder, 10 grains every 5 hours; for children Tinctura opii camphorata (paregoric) 5 drops every 3 hours. This is an extremely serious disease, and the mortality is high.

PLEURISY.

(Pain or stitch in the side.)

The membrane which envelops the lungs is a very common seat of painful inflammation. The pain is usually sharp and stabbing in character. In the majority of cases this pain is felt on the side near the nipple. Pleurisy is a common complication of all lung fevers, infec-

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tious diseases, rheumatism, and consumption. In many cases the membrane adheres to the surrounding tissue and causes chronic pleurisy. Injuries to the side will also cause it.

Symptoms: Dry cough, which increases the pain; the breathing is irregular and restricted; in the majority of cases chills and fever occur; the pleura has a tendency, by overproduction of the lubricating fluid, to produce effusion.

Treatment: Absolute rest, warmth, light diet, administration of quinine, 5 grains, with 5 grains of Dover's powder every 3 or 4 hours. Externally, apply over the seat of pain a mustard plaster or paint with iodine. Great relief is obtained by strapping the affected side of the chest with strips of adhesive plaster 2 inches wide. These strips should be applied very tightly and overlap each other, reaching from the breast bone to the spine. Pleurisy with effusion requires an operation.

PNEUMONIA.

Lung fever is usually the result of sudden chilling of the body and subsequent infection by bacteria. The attack may weaken the lungs and predispose to tuberculosis or recurrence of the disease itself. Pneumonia in drunkards is nearly always fatal.

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Symptoms: Distress in the chest, with difficulty in breathing; severe chills; temperature rises rapidly and reaches 104° or 105°; scanty urine; respiration becomes rapid and soon reaches from 40 to 60 per minute; the pulse is full and jerky. The most prominent symptom is the cough, which at first is dry but is soon accompanied by a bloody mucous expectoration (rusty sputum); the face is flushed; a pleuritic pain is present on the affected side. Usually but one lung is involved; double pneumonia is invariably fatal. Delirium is present in some cases. The disease usually lasts from 7 to 11 days.

Treatment: As the mortality in pneumonia is high, especially in the north, and as death is mostly due to heart failure, it becomes our first duty to see that proper stimulation is administered from the start. Use Strychnine, $\frac{1}{60}$ of a grain every 3 or 4 hours for adults; for children Aromatic spirits of ammonia, about 15 drops in water every 2 or 3 hours. For high fever, cold sponging every 4 hours. See that the bowels move regularly. Cover the chest with a cotton jacket made of a heavy layer of cotton batting, covered by muslin and held in place securely with safety pins. Give quinine, 5 grains every

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3 hours. If the cough is troublesome, give Brown Mixture, 1 teaspoonful 3 or 4 times a day. The diet must be liquid. On recovery the patient must be watched carefully for a long time, and Sirup Iodide of Iron in half teaspoonful doses administered 3 times a day.

PTOMAINE POISONING.

It is always due to the presence of ptomaines in the food (particularly in canned meats or fish, which should be avoided if possible on this account). Decomposed fish, especially the fish heads which the natives bury before eating, and old moose meat are frequent causes of this trouble.

Symptoms: Colicky pains in the stomach and abdomen; cramps in the calves of the legs; convulsions; nausea and vomiting; diarrhea, with watery (sometimes bloody) stools; the abdomen is distended by gas; the pulse always becomes weak and rapid, but there is rarely any perceptible rise of temperature (which sometimes may become subnormal).

Treatment: It is well to begin by administering an emetic, Wine of Ipecac in teaspoonful doses every 10 minutes until vomiting occurs. After the stomach has been emptied, give 1 grain of

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calomel and apply hot fomentations or hot-water bottle to the abdomen. If pain and diarrhea are persistent, give Chloranodyne, 10 drops in water and repeat in one-half hour if necessary. Should weakness continue, administer Aromatic spirits of ammonia, 30 drops in water, every hour or two.

All food should be withheld for at least 12 hours, after which small quantities of milk, broth, chocolate, etc., may be given at intervals of 2 or 3 hours.

RICKETS (RACHITIS).

A disease, caused by lack of nutrition, which affects young children, causing defective development and sometimes deformities of the bones. Predisposing causes are heredity, feeble digestion, and defective assimilation, poverty and hardship, tuberculosis, syphilis, and, most important to us, unhygienic surroundings; dark, filthy, damp huts, without ventilation and often overcrowded; food unsuited to the age and digestive power of the child, such as decomposed fish, game, etc.

Symptoms: The most pronounced early symptom in every case is a peculiar sensitiveness of the child to touch; there seems to be constant

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deep-seated pain in the muscles and bones; the child is irritable and seems to be highly nervous; it sleeps poorly and is often disturbed by nightmares; the digestion is poor; the abdomen becomes greatly distended; the secretion of gastric juice seems to be absent, and there is always an excessive formation of gas, with a tendency to nausea and vomiting; in some cases the appetite becomes abnormally large, without any apparent benefit to the nutrition of the child; there is always a marked tendency to decay of the teeth; in advanced cases the muscular weakness becomes so pronounced that the child refuses to move, and this disinclination to move may be mistaken for paralysis. All rachitic children have a tendency to profuse perspiration. From constant lying down, the hair becomes thin, and falls out; the child suffers from cough, as in scrofula; the eyes are inflamed and there is enlargement of the joints and softening of the bony structure. The head of the child seems to be abnormally large in proportion to the body, the sutures are open and the head becomes flat on top, giving an appearance of being square.

The nervous symptoms become more pronounced and gradually develop into convul-

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sions; there is twitching of the muscles of the face, which as the disease advances becomes almost constant; the outline of the chest changes, and it assumes the shape of a pear (so-called pigeon breast); the spine is frequently curved and softness of the bones predisposes to bowlegs. Throughout the different stages of rachitis, the child may suffer either from diarrhea or constipation.

Treatment: Fresh air is most important; the child must be taken out of doors several times each day, provided the weather is suitable; he must, of course, be warmly clad, owing to excessive sweat and general debility. The dwelling should be well ventilated. Food should be fresh and nutritious, and of course well cooked. Digestion should be aided by Elixir iron, quinine, and strychnine ½ teaspoonful before meals. For constipation give ½ teaspoonful of Fluid Extract Cascara Sagrada every evening. Cod liver oil acts as a tonic, as well as a food, more especially if it is reenforced by Sirup of Hypophosphites (cod liver oil, 1 teaspoonful with Sirup Hyphophosphites, 1 teaspoonful every 3 hours during the day). Sponging the body with cold salt water is especially beneficial where great muscular flabbiness

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and nervous twitching are present; be sure to rub briskly after the bath. For convulsions, give Bromide of Potassium, 2 or 3 grains dissolved in water. The diarrhea is controlled by Bismuth Subnitrate 5 grains, with the addition of 1 or 2 drops of Camphorated tincture of opium every 3 or 4 hours.

RINGWORM.

A contagious disease of the skin; caused by a vegetable parasite. The symptoms are circular patches of the skin (reddened rings) with clear centers; some itching; slight scaling. For treatment, paint the rings with Tincture of Iodine once a day.

RHEUMATISM (ACUTE).

In the majority of cases, rheumatism is the direct result of prolonged exposure to cold or dampness. As a rule after the acute symptoms subside, it reappears. Rheumatism may be acute (with fever) or chronic.

Symptoms: The disease usually begins abruptly with chills and sore throat. The large joints become swollen, exquisitely painful and tender to the touch. The inflammation spreads from joint to joint, but disappears abruptly in one while it attacks another. Sometimes the muscles

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are rigid and painful. The fever in rheumatism (acute) is extremely irregular in its course. Profuse perspiration, with a sour odor, occurs. The urine is highly colored and scanty. In 35 per cent of the cases, inflammation of the heart (endocarditis) occurs.

Treatment: A patient attacked with rheumatic fever should be put to bed between woolen blankets in a warm room free from drafts. Meats, sweets, wines, and liquors should be forbidden. Give Sodium Salicylate, 20 grains, with plenty of water, every 4 hours. Local treatment is of great value. Apply freely chloroform liniment to the affected limbs and wrap in cotton batting. In many cases the application of heat to the attacked parts adds to the patient's comfort.

Lumbago is a form of muscular rheumatism in the loins and small of the back; it is frequently the result of lifting heavy weights. It is never complicated by inflammation of the heart. For treatment apply dry heat to the back (or a porous plaster). Sometimes the use of a hot footbath and Dover's powder, 10 grains on going to bed, will cut short the attack.

In chronic rheumatism a change of residence to a dry, warm climate may effect a cure. Give

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Potassium Iodide, 15 grains 3 times a day; also use local applications of dry heat and chloroform liniment. If Potassium Iodide is not tolerated by the patient, give Salol, 5 grains every 3 hours.

SCARLET FEVER.

This is a highly contagious, eruptive fever. The complications are Bright's disease, suppuration of the middle ear, and pleurisy.

Symptoms: Vomiting; chills (or convulsions), with sudden high fever and pulse ranging from 130 to 180. After 24 hours of fever the eruption appears as a bright scarlet rash on the face and neck, at first in the form of minute dots, but in 24 hours it extends over the entire surface of the body. The appearance of the patient may be likened to a "boiled crab." This remains at its height for 4 or 5 days; then gradually fades away. A scaling of the skin follows; these scales convey the contagion. The throat symptoms are severe from the onset; the tonsils are enlarged and may be covered with dirty membrane; the tongue is red and covered with papillæ resembling a strawberry. The mortality in scarlet fever is 15 per cent.

Treatment: The patient should be quarantined at once. To allay itching and prevent the scales

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from scattering, the skin should be anointed with carbolized vaseline. For fever give spirits of niter, ½ teaspoonful in water every 3 hours, and sponge the body twice a day or oftener with cold water. For weakness or heart failure give Elixir iron, quinine, and strychnine in teaspoonful doses every 2 or 3 hours. To relieve the inflammation of the throat, give cracked ice. Swab the throat with Peroxide of Hydrogen. The patient should be encouraged to drink water freely. Keep the bowels active with Epsom salts.

SCROFULA.

Scrofula is a disease of infancy and childhood, and is due to a variety of causes. Almost anything which lowers the vitality may produce it. Hereditary syphilis is often responsible, but the most common cause is insufficient nourishment and want of exercise in the open air. Scrofula is sometimes a hereditary disease which remains in the same family for many generations. The poor quality of the mother's milk or artificial food lacking proper ingredients for the child's nourishment and growth may be responsible for it.

Symptoms: Marked enlargement of the neck glands, which may eventually become soft and

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form abscesses. These are slow in healing and leave permanent scars. All cases exhibit some form of derangement of the stomach. There is a marked tendency to eczema of the face and scalp. Bronchitis, conjunctivitis, and inflammation of different joints are common complications. Inflammation of the ears and loss of hearing are not uncommon. The eyelids are thickened from constant inflammation and ulcerations of the eyeball are common.

Treatment: The manifestation of scrofula is sometimes of short duration. This disease readily yields to proper hygienic and medical treatment. Cod-liver oil is the best remedy. Reenforce the cod-liver oil with Sirup of Iodide of Iron, which must be given separately, for the two remedies are incompatible. Give Sirup of Iodide of Iron in 15-drop doses before meals, and 2 teaspoonfuls of cod-liver oil after eating. Personal cleanliness, fresh air, and nourishing food are of the first importance. For the enlarged neck glands apply Ichthyol ointment. Should the glands become soft and filled with pus, a free incision is necessary. Treat the eye symptons and eczema of the scalp and face in scrofula as described in chapter on eczema and eye disease.

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SCURVY.

The occurrence of scurvy in Alaska is becoming less frequent every year. Scurvy is not entirely due to dried and salted meats, but to lack of variety in food generally. It still occurs here sometimes in infants who are fed on condensed milk or artificial food. Breast-fed babies do not contract the disease.

Symptoms: Spongy, bleeding gums and foul breath. Teeth become loose and fall out. Hemorrhages from the stomach and bowels. Pain, tenderness, and swelling of the joints may be present.

Treatment: An immediate change of diet to one in which an abundance of vegetables, fruits, potatoes, cabbage, or fruit acid is supplied; make free use of Citric acid in water (or lemon juice). Give Tincture Iron Chloride, 5 drops in water, 3 times a day. For the spongy and bleeding gums, use mouthwash with a little alum, or Peroxide of Hydrogen, 25 per cent. Infants with scurvy should not be kept on an exclusive diet of artificial food or milk. Give a little baked apple, or raw scraped apple, fresh meat juice, or broth and eggs.

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SMALLPOX.

Smallpox is a highly contagious, eruptive disease of high mortality. Formerly the epidemics were very much dreaded, but vaccination has proved to be a great prophylactic measure, and minimized the danger of infection.

Symptoms: The disease begins with chills, headache, backache, vomiting, and fever which lasts 3 or 4 days. The eruption then appears, remains for a week, and is followed by a secondary rise of temperature. The face is swollen, the eyes closed from the inflammation; cough may be present.

Character of eruption: Eruption appears on the third day, first on the forehead and lips; it resembles red papules, which are hard and feel like shot imbedded beneath the skin. These gradually change to vesicles and finally to pustules with a depression in the center. In severe cases hemorrhage occurs under the skin.

When a case of smallpox appears notify the physician or the district superintendent. In the meantime isolate the case to prevent any one coming in contact with it.

Treatment: The patient should be put to bed, the bowels opened freely, and only liquid diet given. The headache is relieved by local cold

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applications and by Salol and Phenacetin tablets, 2 every 3 hours. For the fever, sponge the body with cold water, give cool drinks and quinine, 5 grains every 3 hours. Irrigate the eyes with Boric acid solution if necessary. For sleeplessness give 15 grains of Potassium Bromide at night. The mouth and nose should be kept clean with a solution of Boric acid. To prevent the skin from pitting, scratching must be prevented. For the itching apply carbolized vaseline twice a day. For depression which is apt to follow give Elixir of iron, quinine, and strychnine in teaspoonful doses every 3 hours.

Vaccination.—*When an outbreak of smallpox occurs, every one in the locality should be vaccinated and an absolute quarantine maintained.* For uniformity the left arm is usually selected, the site of the vaccination being the outer surface of the upper third of the arm. Carefully cleanse the spot with soap and water and wipe dry. Do not use any antiseptic solution, as this prevents it from "taking." The skin should be scratched and cross scratched with an antiseptic needle or a special scarifyer, which is furnished with the virus. Be careful not to cause bleeding, for it is not necessary; just scrape the upper layer of the skin and produce oozing of

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the serum. The skin scraped should not exceed ½ inch in diameter. The virus is then rubbed in and allowed to dry. A shield for protection of the wound may be applied, but is not necessary; a clean bandage will answer the purpose. Never use the same needle for scratching two persons' arms without first sterilizing it in boiling water. The hands of the vaccinator should be scrupulously clean, and it is best for one person to clean and prepare the arms while another does the vaccination.

Symptoms following vaccination: Two or three days after vaccination a reddened papule appears. This gradually increases in area, becomes paler in the center and raised at the edges, with an inflamed areola; about the fifth day it is transformed into a vesicle. About the twelfth day the vesicle dries, forming a scab, which later becomes detached, leaving a permanent scar. During the development of the vesicle there may be nausea, vomiting, headache, and some elevation of temperature.

Complications: An infection of the arm may occur from bad technique or subsequent infection of the wound. The treatment of this condition is cleansing the wound daily, dusting with

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Boric acid, and covering with clean gauze and bandage.

Revaccination: While the immunity conferred against smallpox is usually efficient for some time after vaccination, it is diminished after a number of years. Occasional revaccination becomes necessary. It is always advisable to revaccinate every one upon exposure to smallpox or in the presence of an epidemic.

SORE THROAT.

Sore throat is not a disease, but one of the symptoms of a great many local and constitutional diseases. It may be due to a common cold, tonsillitis, diphtheria, syphilis, infectious fevers, or rheumatism. Under this heading will be described the sore throat caused by a common cold.

Symptoms: Pain on swallowing, with constant desire to clear the throat; hoarseness; slight cough and stiffness of the muscles of the neck; pain over the whole body, with slight fever. Upon examination the throat and tonsils are found to be red and swollen.

Treatment: Rest in bed; hot foot bath and Dover's powder, 10 grains, with the addition of quinine, 3 grains, at night; a weak solution of

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Hydrogen Peroxide, or even common salt, makes a good gargle; cold compresses around the throat are of great value; a good laxative helps to shorten the attack.

STOMATITIS (SORE MOUTH).

A disease of childhood characterized by inflammation of the mucous membrane of the mouth. It is always associated with slight disturbance of the digestion or lack of cleanliness of the teeth, gums, and mouth.

Treatment: Wash the mouth frequently with Hydrogen Peroxide, 50 per cent, or a solution of Boric acid. Regulate the diet and bowels.

SWEATING.

Excessive sweating may be caused by the use of alcohol or drinking too freely of ice water, etc. It may be local or general. The hands, scalp, and feet are especially likely to perspire freely. This is one of the symptoms of rheumatism, blood poisoning, and consumption. Offensive sweating is due to decomposition of sweat.

Treatment: The skin should be kept clean by daily bathing with soap and water. For offensive sweating of the hands and feet, dust with Boric acid or Talcum powder.

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SYPHILIS.

Syphilis is a constitutional disease usually acquired by sexual contact and is due to infection by specific germs. It may be transmitted by infected cups and dishes, by kissing, or it may be inherited from parents (hereditary syphilis).

SYMPTOMS.

Primary stage: A chancre appears on the penis, or the inner surface of the labium in the female, sometimes on the lips, not earlier than three weeks after infection. Any sore appearing earlier than this time after exposure is not a hard chancre, but a chancroid, which is not syphilitic, but only a local sore. The chancre is a single round induration, hard, painless, and with little or no secretion; the glands in both groins are usually enlarged (bubo).

Secondary stage: Five or six weeks after its appearance the chancre heals; the patient is troubled with indigestion and weakness; there is slight fever and headache, with pain in the bones; sore throat with ulcerations; rose-colored eruption all over the face and entire surface of the body; an eruption appears upon the mucous surfaces, especially of the mouth and throat; these patches of eruption are extremely conta-

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gious, and the disease is frequently communicated by kissing or by the use of cups, knives, forks, etc. In the later stages falling of the hair and enlargement of the glands occur.

The tertiary stage seldom manifests itself before the second year, and only in cases which have received insufficient treatment or none at all. The symptoms of this stage are ulcerations of the skin and mucous membranes of the nose and palate, with necrosis of the bones. Paralysis and insanity result from the destructive changes in the nervous system.

In hereditary syphilis the signs are not usually manifested until 3 or 4 weeks after birth. The typical eruption then appears on the skin, with sores behind the ears and about the corners of the mouth and with mucous patches about the buttocks. There is constant nasal discharge. The face presents a senile appearance; the skin is wrinkled, and there is wasting, debility, and fretfulness. If the child lives, notched teeth and inflammation of the eyes (keratitis) develop later.

TREATMENT.

The treatment of syphilis among the natives is unsatisfactory, as they do not realize the seriousness of the disease, nor the necessity of faithful

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and prolonged treatment. This disease can be treated intelligently only under the supervision of a physician. However, there are cases that have to be treated by the laity, and for these the following treatment is recommended:

First stage: Keep the sore clean and dry, dust with calomel powder once a day.

Secondary stage: Begin treatment as soon as this stage is manifested, by giving Protiodide of Mercury, pill, $\frac{1}{8}$ of a grain, 3 times a day after meals. The next day give 2 pills, 3 times a day, and continue to add 1 pill to each dose every day until the patient complains of sore mouth and gums and a metallic taste in the mouth; this indicates that the physiological limit of the drug has been reached. Then reduce the number of pills one-half and continue them 3 times a day. If the mouth symptoms persist, discontinue the treatment until they disappear, after which it should be resumed. As a mouthwash use a gargle of Peroxide of Hydrogen 50 per cent. After 3 or 4 months of the mercury treatment, add 10 grains of Potassium Iodide to the dose of mercury. Dust the mucous patches with calomel.

Tertiary stage: Give large doses of Potassium Iodide; begin with 5 grains 3 times a day and

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increase gradually up to 25. Watch the effect on the stomach, and if digestion is impaired, stop the medicine for a week, and then resume. Wash the ulcers daily with Boric acid solution, apply mercurial ointment, and bandage.

Hereditary syphilis in children: Give Sirup Iodide of Iron, 10 to 15 drops 3 times a day; rub well into the abdomen Mercurial ointment about the size of a pea 2 or 3 times a week, and cover with binder.

A patient suffering with syphilis should be under treatment and observation of a physician at least one year.

The new remedy, Salvarsan (606), is the treatment par excellence for the native, as one injection is equivalent to several months' treatment with mercury. It is to be hoped that it will be possible to administer Salvarsan to the natives in the near future. This remedy can be given properly only by an experienced physician, and in a hospital.

SUPPURATION OF THE EAR.

(Running ear.)

Inflammation of the middle ear may be due to slight congestion or to infection by various bacteria. When the infection is due to bacteria, it

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always ends in the formation of pus, which soon becomes so abundant that the drum membrane ruptures, and there is a constant discharge of thick, yellow matter. The various infectious diseases, more especially those which affect the mucous membrane of the mouth, invariably attack one or both ears. The habit which many people have of cleaning and poking the ears with earspoons, hairpins, and other objects scratches and injures the membrane and renders it liable to infection; enlarged tonsils and adenoids favor its occurrence. Violent sneezing or blowing of the nose sometimes forces infected secretions into the middle ear, or by its violence ruptures the drum membrane.

Suppuration of the ear is one of the common complications in measles, diphtheria, and scarlet fever.

In all cases where purulent discharges are present (except where the pus is due to small boils forming in the external canal, and which may be seen by reflecting light from a small mirror into the external ear), you may take it for granted that the drum membrane is ruptured.

The drum membrane is not the essential organ of hearing, as people with ruptured drums often hear quite well. It is merely one of the factors

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in sound transmission. A drum membrane which is incised by a physician for the purpose of draining pus from the middle ear heals more quickly than one which ruptures spontaneously.

A running ear is really a very serious condition, for not only will the hearing become impaired if the condition is not treated, but the disease will progress, with destruction of the bony structure, and may finally reach the brain, causing meningitis or brain abscess, which may prove fatal.

The symptoms of inflammation and suppuration of the ear are identically the same that are found in any abscess. These are chills, fever, pain, throbbing when pus is forming, etc. (to understand them better, read description of abscess).

Treatment: (See also chapter on earache.) After the ear drum ruptures and the pus begins to flow, the ear should be irrigated with hot Boric acid solution (2 teaspoonfuls to a pint of water) every 3 or 4 hours. No discharge should be allowed to accumulate as it may infect the face or hands and produce eczema.

Never use a solution of Hydrogen Peroxide in the ear as this generates gas, the pressure from which is apt to force the pus into the deeper portions of the ear. Likewise, when syringing

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the ear, be gentle in all manipulations and do not permit the solution to enter the canal with sufficient force to produce pain. If a fountain syringe is used, it should be lowered. Internally give Elixir of iron, quinine, and strychnine, 1 teaspoonful 3 times a day, or, what is preferable, 10 to 15 drops of Sirup of Iodide of Iron. If eczema develops apply Zinc oxide ointment.

TEETHING IN INFANCY.

As a rule teething in infancy is associated with comparatively little disturbance. On the other hand, this condition may produce convulsions, which are sometimes fatal.

Symptoms: Increased flow of saliva; the child is restless and feverish and often cries; the gums as a rule are inflamed, and the child exhibits a desire to bite; in some cases the child becomes suddenly stiff and pale, the head is thrown backward, and convulsions follow.

Treatment: Place the child in a hot bath at once, and let it remain for 5 or 6 minutes, then remove and wrap in hot flannel blankets. Give an anema of warm soapsuds and 2 grains of Bromide Potassium by mouth. Lancing the gums is sometimes necessary.

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TEETH.

As the native of Alaska is usually unable to obtain the services of a dentist, it becomes all the more necessary to preserve his teeth by constant cleanliness. Every teacher should instruct the pupils regarding the care of the teeth. (Consult books on hygiene.) The teeth of children should be frequently examined for the purpose of detecting deformities in growth. A large percentage of deformed faces are due to the effects of double teeth (where the second set are cut before the first have disappeared). In these cases the milk teeth should be extracted in time to allow the second set ample space for proper growth.

THRUSH (WHITE MOUTH).

A parasitic affection of the mouth in infancy. The mouth is hot and a number of small white patches appear on the gums and soft palate. The digestion is impaired, and there is slight fever. The child will not eat on account of pain.

Treatment: Wash the mouth carefully with a solution of Boric acid several times a day; give small doses of castor oil.

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TONSILLITIS.

Inflammation of the tonsils. The tonsils are red and swollen; there is pain, extending to the ear and jaw, with difficulty in swallowing; often considerable inflammation of the throat, and in some cases membranes and abscesses may form; it is difficult to open the mouth because of the pain and swelling; chills and fever, accompanied by pain along the spine and legs. Diphtheria may be confused with tonsillitis, but the membrane in diphtheria is removed with difficulty, leaving a bleeding surface; in tonsillitis it is easily removed, leaving a clean surface; tonsillitis is often produced by exposure to cold. Suppurative tonsillitis (quinsy) is due to pus microbes.

Treatment: Two tablespoonfuls of Epsom salts should be given at once. Warm or hot gargles of Boric acid or Hydrogen Peroxide may be used every half hour. Apply externally hot poultices, which should extend well under the ears. Give 2 tablets of Salol and Phenacetin every 3 or 4 hours. An excellent gargle consists of Tincture of Iron Chloride 1 teaspoonful, and glycerine 4 teaspoonfuls, with 4 ounces of water.

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TOOTHACHE.

Toothache in the majority of cases is due to caries of a tooth. This decay may be due to bacteria which find a suitable soil in the particles of food accumulated between the teeth, if they are not carefully and regularly cleaned after eating.

Treatment: If there is an accessible cavity, a small piece of cotton dipped in toothache drops (or oil of cloves, peppermint, etc.) should be introduced into it. Considerable relief is sometimes obtained by holding in the mouth a solution of Bicarbonate of Soda as hot as can be borne. If a gum abscess forms it should be lanced without delay with a previously sterilized knife. If decay is extensive the tooth should be extracted.

TUBERCULOSIS (CONSUMPTION).

Tuberculosis is the principal disease which the native of Alaska has to combat; if not conquered, it will in time exterminate the race. It is therefore important that every one interested in the welfare of these people should have a thorough understanding of the cause, prevention, and treatment of this disease. When speaking of tuberculosis we usually mean con-

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sumption of the lung, but we must not forget that there are other forms of this disease. The tubercle bacillus may attack the bones, joints, glands, skin, kidneys, intestines, throat, or even the brain and spinal cord.

Causes: The predisposing causes of tuberculosis are inherited weakness, frequent exposure to cold without sufficient protection of the body, wet feet, overcrowded and poorly ventilated houses, general debility, the excessive use of tobacco and alcohol, adenoids, and in fact any condition which tends to lower the resisting power of the individual. Pneumonia especially predisposes one to tuberculosis.

The *active* cause is the tubercle bacillus. This is the seed of the disease; it resembles a small rod, which can be detected only by a microscope of high power. The tubercle bacillus is not a parasite, but belongs to the lowest type of plant life, consisting of a single cell. For its multiplication and activity a favorable soil and nourishment are necessary. Filth, dirt, moisture, and darkness fulfill these requirements. Dryness and sunshine destroy it. The action of the bacillus, after it has found a suitable spot and has increased in numbers, is a process of destruction. The portion of the lung at-

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tacked is first solidified; this is followed by degeneration, with the formation of cavities and the expulsion of the débris with the sputum.

Mode of transmission: The tubercle bacillus occurs in the sputum of tuberculous persons, and is in the air almost everywhere. It is dangerous to live in a room with a consumptive. With every cough hundreds of these germs are expelled into the air, unless a handkerchief is held before the mouth during every coughing spell; this is known as "droplet infection." The sputum of such a person contains the seed of the disease in great numbers. If this sputum is not collected and destroyed properly, but is allowed to dry and to be scattered by the wind, the disease may be widely disseminated. It is therefore evident that we are in constant danger of infection, and it is practically a case of the survival of the fittest. If our resistive power is normal, we do not contract the disease, for the soil is not favorable; on the other hand, if our resistive power is lowered and if we live in unhygienic surroundings, the soil is adapted to the growth of the germ, and infection is likely to result.

The common drinking cup plays a very important factor in the transmission of tubercu-

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losis. Another cause which is very prevalent among the natives is the common practice of the mother chewing food for her child to swallow; the danger of transmitting tuberculosis from a consumptive mother to a healthy child in this way is obvious. The idea that tuberculosis is inherited is erroneous, for no one is born with the disease, but the inherited tendency or predisposition to the disease can not be denied.

It is of the utmost importance that all cases of tuberculosis should be detected in the early stages, but unfortunately this is possible only after a careful examination of the chest by a competent physician. It requires no skill to make the diagnosis in the later stages when emaciation, cough, fever, loss of weight and pains in the chest are present.

Symptoms: The earliest symptoms of consumption are a tired feeling after the least exertion, afternoon rise of temperature, irregular appetite, and a dry, hacking cough, most noticeable in the mornings. As the disease progresses, these symptoms become more marked and in addition there is anemia, loss of weight and strength, night sweats; the cough is more constant, with expectoration and shortness of breath. In the last stages, that of cavity for-

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mation, the sputum is increased in quantity, greenish in color, and may have a foul odor. This is also the stage in which hemorrhages are frequent. The patient becomes bedridden; does not care for food; may have constipation. Death results from debility, rarely from hemorrhage. A characteristic feature of this disease is the hopeful attitude of the patient even to the last day.

Prevention: This is the keynote to the successful campaign against tuberculosis. The consumptive should be isolated when possible, and it is especially important that he should sleep alone. He should be supplied with a proper receptacle for the sputum. The spit cup should at all times contain a solution of carbolic acid and be supplied with a cover to prevent flies from carrying the germs; the cup should be emptied and the sputum burned twice a day or oftener if necessary. When a special sputum cup is not provided, the use of any cuspidor or even a tin can is better than expectorating on the floor and over the bedclothing. The patient should have his own dishes, and they should be sterilized by boiling after each meal. Caution the family against the danger of kissing, and give instructions regarding ventilation of the

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room and especially regarding the collection and disposal of the sputum.

After the death of the patient his clothes and bedclothing should be burned. His room should be sealed as tightly as possible and disinfected by burning sulphur, using 10 pounds of sulphur to every 1,000 cubic feet of space.

In the schoolroom pupils should receive simple lectures on prevention of tuberculosis once a week, and signs bearing the inscription "Do not spit on the floor; to do so may spread consumption" should be posted in conspicuous places. The daily reading of this rule by the entire school is sure to leave an impression. Several spit cups with the carbolic solution should be prepared and placed in various parts of the room for those pupils who may cough during the session of the school. Each day a different pupil should have charge of the disposal of their contents, under the supervision of the teacher. Pupils should be instructed in the danger of placing pencils, marbles, etc., in their mouths, and especially cautioned against the exchange of chewing gum and candy. Twice daily all the windows in the schoolroom should be opened; the pupils should then be required

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to rise in their places and take a series of breathing exercises lasting 5 minutes. For drinking purposes cups made in school of stiff paper should be used.

Sleeping with open windows should be continually urged in the villages. The natives should be taught that the common habit of remaining in wet clothing or shoes is the stepping stone to serious trouble. The effect of outdoor life is plainly seen in the condition in which the natives return to their villages after a summer camping season. Many persons suffering from tuberculosis are alive to-day because of this yearly outing.

Adenoids, if present, should be removed, and any obstruction in the nose should be corrected. The general tone of the system should be improved if possible.

Treatment: There is no specific for tuberculosis. Drugs have a tendency to upset an already delicate stomach and should be used only in special cases, in small doses, and should be discontinued as soon as possible. In brief, the treatment should be plenty of fresh air and sunshine, moderate exercise (walking) when possible; good, nourishing food, as milk, eggs, clams, and game. Fatty foods are very beneficial and

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should be given freely when the stomach will tolerate them; cod liver and seal oils are excellent foods.

The medicinal treatment should be directed to the symptoms as they appear. For the weakness, loss of appetite, and anemia, Elixir of iron, quinine, and strychnine, 1 teaspoonful before meals, is indispensable. When cough is not excessive, it should not be interfered with, for it is nature's method of relieving the air passages of accummulated secretions. Creosote in 3-grain doses every 4 hours acts very well in mild cases and should be tried first. In severe cough, where the patient is unable to sleep, and especially if it is associated with pleuritic pain, give ½ teaspoonful of Elixir Terpin Hydrate every 3 or 4 hours; for children, Brown Mixture is preferable. Dose, ½ to 1 teaspoonful every 3 or 4 hours as required. Treat hemorrhage and pleurisy as indicated under these headings. For diarrhea give Bismuth Subnitrate, 15 to 20 grains every 4 hours.

TUBERCULOSIS OF THE SPINE.

This is quite common among the natives and occurs in children. If allowed to remain untreated, the results are curvature of the spine

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and sometimes paralysis of the lower limbs, due to pressure on the cord and the consequent degeneration of the nerves that supply the lower extremities.

Treatment: It is also important that this condition should be recognized in the early stages. In addition to the general treatment for tuberculosis, a support should be applied to the back, in the form of a plaster of Paris cast. This should always be performed by a physician, and therefore every case should be referred to him; in the meantime the child should be kept in bed, at perfect rest.

TUBERCULOSIS OF THE GLANDS.

This disease is of common occurrence among the natives, and the glands attacked are usually those of the neck. If allowed to progress, they will suppurate and leave a discharging ulcer which leaves a scar.

Treatment: Treat on general lines of tuberculosis or scrofula. When the glands suppurate, the patient should be referred to a surgeon.

TYPHOID FEVER (ENTERIC FEVER).

Typhoid fever is an infectious disease, due to the typhoid bacillus. Discharges from typhoid-fever patients contaminate the drinking water,

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milk, shellfish, or vegetables. Typhoid germs are often carried by flies to the food. The typhoid bacillus can live for months in water and soil. The disease is fortunately rare in Alaska.

Symptoms: The disease begins with headache, nosebleeding, coated tongue, and fever. The temperature is very characteristic; during the first week it rises continually until it reaches 104° F. During the second week it usually reaches its greatest height and then gradually declines to normal. The characteristic typhoid temperature is always several degrees higher in the evening than in the morning of the same day. Diarrhea is one of the prominent symptoms; the stools are green and resemble pea soup. The abdomen is distended by gas and is sensitive to pressure. Rose-colored spots appear on the abdomen the seventh day; they disappear on pressure. Delirium and various nervous symptoms are sometimes present, due to the toxins and high fever. There may be temporary insanity. A sudden drop of temperature indicates intestinal hemorrhage or perforation.

Treatment: Stools should be disinfected by mixing with chloride of lime; all bed and personal clothing should be boiled to prevent the spread of the disease. After handling the patient

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the hands should be washed and then immersed in Bichloride of Mercury solution, 1 to 1,000. Typhoid fever is uninfluenced by any remedy, and its course can not be shortened.

The patient ought to be removed to a hospital at once and restricted to a diet of milk and beef tea, given at regular intervals of 3 hours during both night and day. Give 1 grain of calomel. Cold water may be given freely to allay thirst. If the tongue becomes dry and brown and the abdomen distended, give 5 drops of spirits of turpentine in water every 4 hours. Control fever by sponging with ice water when over 103° F. Wash the mouth and teeth often. If the patient seems to be weak give Strychnine, $\frac{1}{60}$ of a grain 3 times a day. If intestinal hemorrhage occurs, put an ice bag on the abdomen, raise the foot of the bed, remove the pillow entirely, and give Morphine, $\frac{1}{8}$ of a grain, at once.

ULCERS.

Ulcers of the skin are usually found on the lower extremities. Varicose veins are a common cause. Wounds, abscesses, frostbites, burns, and bruises usually terminate in acute ulcerations which if not properly treated are liable to become chronic. Uncured cases of syphilis

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have a tendency to cause ulcerations on different parts of the body.

Bed sores are caused by pressure, from lying or sitting in bed for a long time, as in paralysis or during the course of a severe illness. These ulcerations usually occur on the shoulders, buttocks, hips, heels, or even ankles. While pressure is the direct cause, infrequent bathing of the parts, and uncleanliness due to perspiration, urine, fæces, and unclean clothing on the person or the bed predispose to their appearance. Eczema has a tendency to sloughing, which produces ulcers on the neck, body, legs, etc.

Ulcers are as a rule tender and inflamed and have generally a hard elevated area around the edges. The acute ulcer is usually rapid in its progress and severity, and is always accompanied by pain of a throbbing and stinging character; chronic ulcerations are usually smaller and the inflammation less severe. Chronic ulcers may remain stationary for a long time, and then without apparent cause suddenly begin to slough and in some cases may penetrate to the bone.

Treatment: In treating ulcers caused by bed sores, a careful adjustment of pressure on all parts of the body by the use of a good mattress

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is essential. Frequent changes of the patient's position are necessary. The body should be frequently bathed and the skin hardened by sponging with alcohol to which a little alum or spirits of camphor has been added; the skin should then be carefully dried and afterwards dusted with Talcum powder.

Varicose ulcers are best treated by placing the patient in bed and elevating the limb. The ulcer should be first washed with Boric acid solution; and then it should be dusted with Bismuth or Idodoform, if the ulcer is small, a light dressing of clean cheesecloth, cotton, and bandages should be applied. If for any reason it is impossible for the patient to go to bed, the varicose veins should be supported by an elastic stocking or bandage.

General considerations: Wash all ulcers thoroughly with Boric acid solution. If there is a large amount of pus, use Peroxide Hydrogen. Always dry the ulcers by gently touching with cotton. Powder with Boric acid or Iodoform. Cover ulcers with 5 or 6 layers of antiseptic gauze. The bandage must not be too tight, or it will obstruct the circulation. Secure the bandage with strips of adhesive plaster or safety pins. In dressing ulcers, cleanliness is of the

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utmost importance. Avoid contact with pus, as it is often contagious; never forget to wash the hands thoroughly after touching ulcers or wounds of any kind.

ULCER OF THE STOMACH.

Ulceration of the stomach is caused by abnormal acidity or indiscretion in food, alcohol, etc.

Symptoms: Indigestion and loss of weight; hyperacidity; constant pain in the pit of the stomach, which is increased by taking food; vomiting soon after eating; the vomited matter is mixed with red blood. The disease occurs in young adults, and is liable to terminate in perforation of the stomach and death.

Treatment.—Diet of milk, eggs, and light foods, excluding meats, etc.; perfect rest in bed; give Bismuth Subnitrate, 20 grains every 3 hours, and 1 teaspoonful of Soda Bicarbonate in half a glass of water 1 hour after meals; regulate the bowels; for severe pain $\frac{1}{8}$ grain of morphine.

VACCINATION.

(See Smallpox.)

VOMITING.

Vomiting is only a symptom of some morbid process and may occur in the course of any disease.

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Vomiting due to *catarrh of the stomach* is easily recognized, as the vomiting invariably follows the introduction of food into the stomach. For treatment, give Bismuth Subnitrate, 15 grains after meals.

Vomiting due to *acute inflammation of the stomach* is associated with pain, eructations of gas, and constant nausea. The pain as a rule is relieved by the act of vomiting, and is increased by taking food. The tongue is usually furred, and in some cases a red line on the gums occurs. There is absolute aversion to food.

Give Bismuth Subnitrate, 15 grains after meals.

Vomiting caused by *ulceration of the stomach* has identically the same symptoms as the former, but there is blood in the vomited matter, and pain and tenderness over the stomach when pressure is applied. (*See* Ulcer of stomach.)

Toxic vomiting may occur at any time. The most prominent symptoms are distention of the stomach and formation of gas from decomposition. The vomit is profuse and gelatinous. Give calomel, ½ grain every hour till bowels move freely, followed by Epsom salts.

Vomiting due to *constipation* is accompanied by a coated tongue, bad taste in the mouth,

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fainting, and despondency. A good cathartic is needed.

Nervous vomiting is due to a variety of nerve diseases which act on the vomiting center in the brain. This type occurs without nausea and without reference to the character of the food. The attacks are usually accompanied by severe headache.

Vomiting from *cancer of the stomach:* The vomited matter has coffee-ground appearance and is accompanied by attacks of faintness. Give Morphine, $\frac{1}{8}$ of a grain 3 times a day.

WHOOPING COUGH.

As whooping cough is highly contagious and often fatal to infants, strict quarantine should be enforced. It commences as acute catarrh of the bronchial tubes, and in several days reaches the whooping stage. There are spasmodic attacks of coughing, which occur with varying frequency. The paroxysms are sudden and violent, and the patient seems to be on the verge of suffocating. A quantity of mucus may be coughed up, instantly relieving the coughing. Coughing often produces vomiting and sometimes rupture. This disease may last from 1 to 6 months, and is sometimes followed by tuberculosis.

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Treatment: Because of vomiting, give food in small quantities and at frequent intervals, in order to secure the retention of sufficient nourishment. Diminish the severity of the paroxysms by giving Bromide of Potash, 5 grains, with Tincture opium camphorated 5 drops, 3 or 4 times a day.

WOMEN'S DISEASES.

AMENORRHEA (SUPPRESSION OF THE MONTHLY FLOW).

Suppression of the menstrual flow is normal only during pregnancy and lactation, or after the age of 45, when it usually ceases completely; otherwise it is pathological. Acute fevers, overwork, insufficient food, emotional disturbances, such as anger, fear, anxiety, or grief, may cause a temporary cessation of the menses or a decrease in the flow; an ordinary cold also may cause suppression. In anemia and tuberculosis the flow may cease entirely; this should be regarded simply as a wise provision of nature to prevent any further drain or loss to an already depleted system.

Accompanying symptoms: In the great majority of cases there is a sensation of weight in the abdomen, with nervousness, headache, flashes of

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heat and cold, slight fever, and general depression; there is a tendency to hysteria.

Treatment: This condition should not be interfered with, as in the majority of cases it is only temporary, and, although it has a depressing effect on the patient, it does no material harm. If due to cold, it may usually be relieved by rest in bed, hot foot baths, and saline laxatives. In anemic cases Elixir iron, quinine, and strychnine, 1 teaspoonful before meals is beneficial.

DYSMENORRHEA.

Painful menstruation is due to heredity and a predisposition to hysteria. It may be caused temporarily by overwork. Inflammation of the uterus or tubes and displacement or falling of the womb are common causes.

Symptoms: The most pronounced symptom is severe pain, which may begin several days before the menstrual period. The discharge is dark colored and clotted.

Treatment: Hot mustard footbath, hot-water bottle, or turpentine stupes to the abdomen; small doses of Epsom salts every day; 1 teaspoonful of Fluid Extract of Viburnum Compound every 4 hours; light diet and rest in bed are essential. Some cases are relieved only by an operation.

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MENORRHAGIA.

Profuse menstruation is usually due to congestion of the uterus or ovaries or to displacement. If due to injuries of the womb, tumors, or cancer, it is not only profuse but the intervals between the menstrual periods are shorter.

Treatment: To relieve the hemorrhage give 15 drops of Fluid Extract of Ergot combined with 1 teaspoonful Fluid Extract Viburnum Compound every 3 or 4 hours; absolute rest and mild laxatives.

INFLAMMATION OF THE OVARIES.

This is not a disease, but a symptom which accompanies the majority of pelvic disturbances.

Treatment: Hot applications; cathartics; rest in bed; 5 grains of Dovers powder every 4 hours. The same treatment will apply to inflammation of the womb.

LEUCORRHEA (WHITES).

This is a symptom of many diseases of the female sexual organs. It may be due to local infection or to pelvic congestion caused by constipation, pregnancy, or displacement of the womb. It frequently occurs in anemic and

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consumptive women and is very general in northern climates. This discharge is not contagious and should not be confused with gonorrhea.

Symptoms: White mucous discharge; there may be irritability of the bladder.

Treatment: Good food, open-air exercise, and mild laxatives. Use douches of hot water, containing vaginal antiseptic tablets, morning and night.

GONORRHEA.

In females, as in males, it is due to a specific germ and is generally contracted through sexual intercourse. The differential diagnosis between this disease and leucorrhea can be determined positively only by a microscopical examination of the discharge.

Symptoms: The first symptoms, which occur from 4 to 10 days after infection, are heat, redness, and swelling of the parts. A watery discharge then appears, which in a few days develops into a profuse, thick, creamy one. There is frequent painful urination, with a burning sensation. The discharge gradually diminishes, and the disease may become chronic. This disease may extend to the uterus and tubes.

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Treatment: Rest in bed, light diet, open bowels, plenty of water to drink. The patient should be instructed regarding the contagious character of the discharge and cautioned not to infect the eyes with it. Locally, use vaginal antiseptic tablets dissolved in a quart of hot water as a douche 3 or 4 times a day. Gonorrhea can be properly treated only by a physician and in a hospital.

SUMMARY.

In all diseases of the pelvis use Epsom salts liberally. Where discharges occur, hot vaginal douches are required. The pain in most cases may be relieved by hot footbaths, hot applications over the abdomen, and the administration of small doses of Dover's powder or Phenacetin.

Never interfere with suppression of menses in any manner except that recommended here.

Patients afflicted with excessive flow should be referred to a physician at the first opportunity.

Do not forget that in all inflammations of the pelvis, perfect rest is of the utmost importance. Vaginal discharges are apt to be contagious; therefore warn the patient accordingly.

Backache, hysteria, disturbances of the stomach, and irritation of the bladder may accompany any or all of the above disorders.

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WORMS, INTESTINAL.

There is but one symptom that positively proves that a person has intestinal worms, namely, worms or parts of worms found in the stools.

Tapeworm: The segments of tapeworms are flat, about three quarters of an inch in length and hinged together like scales of armor in a continuous chain, which may reach a length of from 20 to 40 feet. Tapeworm is of a transparent grayish color.

Round worms occur mostly in children. They are from 5 to 6 inches in length and resemble in appearance a common earthworm.

Pinworms are about one-tenth of an inch long. They are usually found around the rectum and are associated with a disagreeable sensation of itching and burning.

Treatment for round or tape worm: Give no food, either liquid or solid, for a period of 6 hours; then administer calomel ½ grain every hour for 4 hours, and follow with 1 tablespoonful of Epsom salts. If the worm or segments should be found in the feces, send it to the nearest physician for identification.

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For pinworms give a large enema of Epsom salts and water.

WOUNDS.

Wounds may be produced by sharp or blunt instruments, violence, bullets, etc. The symptoms are laceration, hemorrhage, and pain. The amount of the hemorrhage depends on the size and condition of the severed blood vessel, in addition to the extent of the wound. If a bullet penetrates the flesh and fractures a bone, the pain is usually intense. In wounds of the abdomen, chest, and pelvis, the hemorrhage is usually internal.

Treatment: Before undertaking the dressing of any wound, or stopping hemorrhage, the hands should be thoroughly washed in Bichloride of Mercury solution 1 to 1,000. All instruments, needles, and sutures must be sterilized by boiling for 15 minutes, or if this is not practicable place them in a 10 per cent carbolic-acid solution for 10 minutes, and afterwards rinse with grain alcohol. If the wound is not bleeding profusely, wash thoroughly with a solution of Bichloride of Mercury, 1 to 4,000, and arrest the hemorrhage as quickly as possible. If the hemorrhage is not severe, continued firm pressure over the surface of the wound with a pad of absorbent cotton or

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sterile gauze (which has been previously dipped in a hot solution of Bichloride of Mercury) will usually stop it in a short time.

Should the hemorrhage be due to the severing of a large vessel, ligation becomes necessary. To ligate, grasp the end of the bleeding vessel with hemostatic forceps and tie it firmly with sterilized catgut. When securely tied, cut the ends of the catgut close to the knot.

If the hemorrhage is very extensive, application of a tourniquet is necessary; the tourniquet may be improvised from a clean bandage, handkerchief, etc. If the wound is caused by a sharp instrument, the hemorrhage is best controlled by applying sutures. The needle carrying the suture should enter the skin at one side of the wound and pass out through the skin at the other side; then tie firmly. Sterilized catgut or silk is the most appropriate suture. When the hemorrhage has been controlled wash the wound by gently sponging with Bichloride of Mercury, 1 to 4,000; then apply a dressing of several thicknesses of sterilized gauze, which should be kept in place by a bandage.

The dressing need not be disturbed for 2 days; then wash the wound daily with Bichloride of Mercury solution and apply a fresh dressing.

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The sutures should be removed as soon as the wound heals. As rest is essential to the healing of wounds, keep the injured member quiet and in a comfortable position by the use of splints, bandges, etc. If the wound is severe, the patient should be kept in bed. If gangrene follows, treat accordingly.

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CHAPTER XII.

VENTILATION.

Air for the lungs is just as essential as food for the stomach; we cannot live without either. Foul or insufficient air, like bad or insufficient food, interferes with the functions of the human mechanism and predisposes one to disease. Tuberculosis is practically a disease due to living under unhygienic conditions—oxygen starvation. Patients in hospital wards which are well supplied with fresh air recover earlier than those who are deprived of it.

The lungs are never entirely filled with pure air after the first inspiration following birth, since they are never wholly emptied and whatever remains is vitiated. The upper part of the respiratory tract is the only part that receives strictly pure air. The amount of oxygen used varies with age and other conditions. During work we consume more oxygen than when at rest or during sleep; more in cold weather than when it is hot, etc. Oxygen is fuel for the body

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just as food is. On the average, an adult requires 3,000 cubic feet of air an hour.

Normal air contains slightly more than one-fifth oxygen, the only part of it essential for breathing. The nitrogen acts only as a diluting agent. If the amount of oxygen in a given quantity of air is reduced by one-fifth, it becomes incapable of supporting life. Passing into the lungs, the air there is deprived of one-fourth of its oxygen, carbonic acid gas is given to it in exchange. The expired air, therefore, not only can not sustain life, but it actually vititates the surrounding air.

The normal amount of carbonic acid gas that may be breathed constantly without objectionable results, is believed to be about 7 parts in 10,000 of air. The more carbonic acid gas there is in a room, the more organic matter there is likely to be found, and therefore, the more danger there is of contagion being gathered from the air.

There are but few natives who suffer for want of food, but there are many who do suffer with air starvation and its deleterious effects. Ventilation is the necessity that is most neglected by the native, but still the most vital to his welfare. It is a matter of prime importance,

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and should receive the immediate and most careful attention of teachers.

Ideal ventilation consists of supplying the proper quantity of air without creating a draft in the room. In the summer, ventilation is a very simple problem; it is readily accomplished by opening windows and doors. Still, few natives take advantage of the opportunity. Even during the hottest days of the year it is not uncommon to find their homes practically sealed, the windows and doors closed, and the rooms hot and unbearable because of the foul air. This fault should be remedied, and free ventilation urged in every village.

During the winter months the problem is more difficult. It is often out of the question to allow the doors to remain open, but a window may usually be opened partially without discomfort to the occupants, and without material loss of heat. Foul and hot air rises and collects at the ceiling; this furnishes a key to the problem. Even with doors and windows closed, if two or three 2-inch holes are bored in the walls just beneath the eaves, a quantity of the foul air and the accompanying odor will escape without any draft, and conditions within will be greatly improved. A few cabins are provided with a spe-

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cial air escape in the roof, in the form of a flume about 5 inches square. The outlet is covered to prevent the rain and snow from entering the room, but openings are left to permit the free passage of air. This is an excellent plan of ventilation, inexpensive and simple in construction, and it should be introduced into every native house.

It is as important to be supplied with fresh air during sleep at night as during the day. The windows should be left open, but special care should be taken to have the body well covered and warm. The head of course should be uncovered. Night air is harmless, provided the body is well protected. The native usually has a supply of furs sufficient for covering.

It is also important to air and sun the bed clothing frequently. For this purpose a dry and sunny day should be selected, and the clothes should be well spread to expose as much of the surface as possible to the free air.

It is the teacher's duty to see that the schoolroom is well ventilated at all times and not too hot. Pupils can not learn or retain their health in a stuffy room; their minds become dull and they feel drowsy.

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The simplest way to keep the air in a classroom pure without creating a draft is to open the windows about 2 inches from the top, preferably on one side only. During recess and lunch hour, when the pupils are out of the room, all the windows should be opened both top and bottom and closed just before school is called again.

Breathing exercises, practiced for 5 minutes once during the morning session and once in the afternoon, will be found exceedingly beneficial. The practice does not consume much time, creates new life in the pupils, and incidentally permits change of air in the room. The windows should be opened, the pupils should rise, line up in the aisle, and go through the exercises to the count of the teacher. Details of breathing exercises may be found in any book on school hygiene.

The temperature of the schoolroom should never exceed 70° F., and the pupils should not be allowed to sit in school without removing their overcoats or parkees. The sudden change from a heated room to the cold outdoor air without proper protection is responsible for many colds.

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CHAPTER XIII.

QUARANTINE AND DISINFECTION.

Quarantine is a means of preventing the spread of contagious diseases from infected persons and localities to other persons and places. Contagious diseases are communicated either directly from the sick to the well, or by the medium of some "carrier." This carrier may be a person who has been exposed to the disease; though he may not contract it himself he may carry the germs about his person and thus be a menace wherever he goes. Such carriers are sometimes all the more dangerous because they are difficult to locate, on account of their own immunity. Other carriers are infected stools, secretions from the nose and throat, and the towels, dishes, and bedclothing of patients.

The more common diseases in which quarantine is necessary are smallpox, measles, diphtheria, scarlet fever, chicken pox, infantile paralysis, whooping cough, and mumps.

When a doubt exists as to whether a quarantine should be established, it is better to err on the safe side and to adopt all measures of precaution. The earlier a case of contagious disease

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is detected and quarantined, the better are the prospects for checking the spread of it. The ideal quarantine is not always feasible in a native village, unfortunately, but we must do the best we can under the circumstances.

When a case of contagious disease is reported, if it is impossible to call a physician, the superintendent of the district should be notified. To allow a contagious disease to rage without an attempt to check it is little less than criminal.

The patient should be placed in a separate room, and no one but the physician and nurse should be admitted. Other persons who lived in the same room or came in contact with the patient should be kept in a separate room or house and carefully watched for symptoms. If the disease should develop among the suspects, immediately isolate the new case and treat it precisely like the original one. The house should be quarantined, and notices posted at the entrance to warn people that there is a contagious disease within; thus—

DANGER, KEEP OUT!
DIPHTHERIA.

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Guards should be appointed to enforce the quarantine.

Whenever several cases of the same disease occur in a village, it is advisable to close the school and prevent the people from congregating. The danger of the disease and the results of breaking quarantine should be fully explained to the natives of the village, and they should be assured that the quarantine is for their personal protection. Under these circumstances it will probably not be difficult to check the disease, and good results may be secured without the services of a police officer.

The isolated patients should have their own dishes, and these should not be removed from the room. *Nothing* should be taken from the room until it has been thoroughly disinfected.

Before entering the sick room the physician and nurse should always wear a cap and gown. If a gown is not convenient, a sheet wrapped about the person will answer the purpose. Before leaving the sick room the cap and gown should be discarded, the hands washed in a 1-to-1,000 solution of Bichloride of Mercury, and a hasty exit made. A clean cap and gown should be worn at each visit.

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All secretions should be made antiseptic before disposal. The urine and stools should be deposited in a vessel containing a strong solution of chloride of lime. The nasal and throat secretions should be burned. The dishes used should be sterilized by boiling for a half hour. Soak sheets, towels, napkins, and blankets in a bichloride solution before washing. Mattresses and furs are difficult to disinfect, and should be burned.

After the patient has recovered, he should discard all clothing in the sick room, jump into a bath tub in an adjoining room, and put on clean clothes. The sick room should then be thoroughly disinfected. Everything in it should be spread out, so that the gas of the disinfectant can penetrate every portion of the infected articles. Formaldehyde gas is the ideal disinfectant, as it is efficient and does not bleach or injure any of the furnishings, but for a native cabin sulphur will answer the purpose very well, and the method of application is simple.

First, it is necessary to make the room tight, or as tight as possible. Place a large dishpan of water in the center of the room, and into it place the vessel containing the sulphur, in order to protect the house against fire. Select some suitable

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vessel (a Dutch oven is best), put a little kindling wood into it, and place the sulphur rolls (brimstone) over the wood. Place the Dutch oven in the dishpan, and light the kindling. Leave the room quickly, for the fumes are poisonous. Close the door and place a suitable notice over it, so that it will not be opened by mistake. The room may be opened after 24 hours and allowed to air thoroughly before being occupied again. Ten pounds of sulphur should be used for every 1,000 cubic feet of space.

Disinfection of native cabins is not always satisfactory, because it is not always possible to seal them thoroughly, and for this reason it is better and safer to burn them if practicable.

It may be stated that the disinfection method described above is of service for destroying fleas, flies, mosquitos, mice, and bedbugs.

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CHAPTER XIV.

NATURAL SELF-PROTECTION.

In all bodies, both animal and vegetable, there is a well-developed system of self-protection. In animals the nasal secretions are mildly antiseptic, and even the tears possess bactericidal properties. The characteristic fluid produced by one gland or set of glands is never produced by another. The blood itself is not only the great nutritive fluid of the body, but it carries different ingredients to different glands, from which each gland individually extracts the particles necessary in its normal functions. Even in the process of elimination of foreign bodies the organs possess a power of selecting different substances. The wandering cells of the animal organism (the leucocytes) possess the property of taking up, rendering inert, and digesting micro-organisms which they encounter in the blood and other tissues.

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PROTECTION BY IMMUNITY.

Immunity may be classified as follows:

1. Natural immunity.
2. Acquired immunity.
   - (*a*) By heredity.
   - (*b*) By disease.
   - (*c*) By accident.
   - (*d*) Temporary.
3. Artificial immunity.

Some individuals possess immunity to a marked degree, while others exhibit only a feeble resistance to bacterial organism. Immunity is never general; it does not confer protection against all contagious or infectious diseases, but only to special diseases, rendering a person invulnerable to one or another.

Many animals are less susceptible to infection than others. Some species of animals are naturally immune to certain infectious diseases; they even resist artificial infection.

Natural immunity is due either to the perfect physiological condition of the body, with its normal secretions and chemical reactions, or to the resisting power of the system developed by evolution.

Acquired immunity is due to the presence in the body of the specific microbe of some disease,

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in a form sufficiently benign to be tolerated yet sufficiently active to stimulate the formation of the antitoxins. In some instances the germs undergo modification before their entrance into the body, and become less active by involution and modification of their structure in accordance with the surrounding circumstances, as climate, temperature, etc.

Artificial immunity is due to vaccination, antitoxic serum, or accidental inoculation.

Immunity acquired by heredity: Occasionally a person will be found in whose family a certain common infectious disease has not occurred for a generation, although the members of each generation passed through one or more epidemics of that particular disease and took no special precautions against it. Negroes enjoy an immunity from certain tropical diseases. Immunity from the paternal side is not as readily transferred as from the maternal side. Vaccinal immunity is sometimes transferred through the placenta. It might be transferred during the nursing period through the milk of the mother.

Climatic immunity: Persons who have lived all their lives in a yellow-fever region are not apt to contract yellow fever, and when they do

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the disease usually manifests itself in a milder form than it would in a newcomer.

Immunity acquired by disease: The attack of certain diseases confers protection from subsequent attacks of the same disease, or an attack of a modification of one disease confers immunity from the original source of modification, as yellow fever, smallpox, measles, and scarlet fever.

Immunity acquired by accident: Sometimes immunity to a certain disease may be produced by the development of antitoxins in the body through the agency of food.

Temporary immunity is due to the development of an antitoxin for a short period, usually a few weeks.

LOSS OF RESISTING POWER OF SYSTEM, AND AFFINITIES.

Temperament bears an indirect connection to the resistibility to infection. The state of the general health appears to be connected with the susceptibility to infection.

Certain cells of the body have a minimum resistance against certain poisons, which is manifested in the case of the tetanus poison by a special affinity for the nervous system. Some diseases, as pneumonia and erysipelas, have a

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tendency to leave the patient more susceptible to the same disease.

Immunity acquired in one country against specific infectious diseases may be lost in the climate of another country.

From the modern point of view, all diseases are due to exposure at a time when the resisting power of the system, for some pathological reason, is suspended. Disease, therefore, may be said to be, with few exceptions, of accidental origin.

An individual may be exposed to some infectious microorganisms, yet infection need not necessarily follow. Immunity depends not only on the body temperature, normal secretions of the body glands, normal nutrition, and normal nerve impulses but also, to some extent, on the mental condition of the individual exposed. All of these combined form a defense against the invading bacteria; the bacteria enter the internal organs, but, meeting the natural resisting power of the system, are destroyed without producing any disease. Unless this resistance is lessened, infection does not occur. It is of the utmost importance, therefore, to maintain the powers of resistance at the highest possible point.

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